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EUROPE'S ENERGY SECURITY

The gas sector diversification challenge, the "Southern Corridor" and the role of Italy

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TABLE OF CONTENTS

Abstract
L'Europa, il "Corridoio del Sud" e il ruolo dell'Italia *p. 5*

Introduction
Natural gas: its relevance and its role *p. 13*

1. Energy for the European Union
The importance of the gas sector: the current situation *p. 18*

1.1 The EU energy dependence *p. 18*
1.2 The "Southern Corridor" *p. 22*
1.3 The background *p. 26*
1.4 Why the "Corridor's" gas is important for Europe? *p. 33*

2. The European Union
Policies, actions and trends *p. 40*

2.1 EU approach to the gas sector over the years *p. 40*
2.2 The current situation *p. 45*
2.3 The "Southern Corridor" and the "Nabucco" falls from an EU perspective *p. 50*
2.4 The role of the "Third Energy Package" in the current south-east Europe energy ground *p. 55*

3. From an economic and geopolitical perspective
A regional approach *p. 62*

3.1 The European energy security from a global perspective *p. 62*
3.2 The Caspian region and Turkey *p. 67*
3.3 EU foreign policy moves and confrontations in the gas sector *p. 79*

4. Further alternatives and outlooks
New actors' involvement, the question of LNG and unconventional gas *p. 86*

4.1 A look outside the EU boarders: Israel and Cyprus *p. 86*
4.2 A long-standing relation with North Africa *p. 95*
4.3 The Middle East *p. 102*
4.4 Spain *p. 105*
4.5 The LNG option *p. 106*
4.6 The "Shale Revolution": an alternative for the EU? *p. 111*

5. The role of Italy
Challenges and opportunities *p. 118*

5.1 The Italian gas market situation p. 118
5.2 Gas for the TAP p. 126
5.3 Current threats and future chances p. 136
5.4 The LNG question p. 140

Conclusion
Final considerations

1. The EU energy dependence: a solved question? *p. 147*
2. The "Southern Corridor" today *p. 149*
3. The "Corridor's" future perspectives *p. 152*

References p. 155

Figures

Chapter 1

Figure 1: EU member states natural gas imports and exports (2012/2013) p. 19
Figure 2: Physical pipelines flowing into EU (2011-2014) p. 21
Figure 3: The Azeri's Gas Fields p. 27
Figure 4: Natural Gas Transportation Costs p. 34
Figure 5: Natural Gas Supply Chain p. 35
Figure 6: EU industrial production evolution (2005 – 2014) p. 37

Chapter 2

Figure 1: Existing gas reserves in the Caspian region p. 50
Figure 2: Projects for the "Southern Gas Corridor" p. 51
Figure 3: ENTSO-G Gas Regional Investment Plans p. 60

Chapter 3

Figure 1: The Azeri's "Shah Deniz Gas Field" p. 67
Figure 2: The Baku-Tbilisi-Erzurum gas pipeline (South-Caucasus Pipeline) p. 73
Figure 3: Possible evolution of the "Southern Gas Corridor" p. 78
Figure 4: EU gas imports from Russia for country destination p. 80

Chapter 4

Figure 1: Israeli/Palestinian and Cypriot natural gas reserves p. 90
Figure 2: North African natural gas pipelines to Europe p. 97
Figure 3: Iran's fossil fuels reserves and pipelines p. 103
Figure 4: The Spanish main gas pipelines and LNG terminals p. 106
Figure 5: LNG Supply Chain p. 107
Figure 6: Liquefied Gas Transportation Costs p. 108
Figure 7: European LNG Imports by Country p. 110
Figure 8: Unconventional shale gas location p. 112
Figure 9: Comparing Gas Prices Europe/USA p. 115
Figure 10: Fracking activity in Europe p. 116

Chapter 5

Figure 1: Gas imports to Italy by source and delivery point p. 120
Figure 2: Evolution of natural gas production by company 2001-2012 p. 121
Figure 3: Foreign gas supplies entering Italy p. 124
Figure 4: Gas consumption variation: a comparison between France, Germany and Italy p. 125
Figure 5: The Trans-Adriatic Pipeline (TAP) itinerary p. 131
Figure 6: Evolution of natural gas demand in the 2012-2040 period p. 132
Figure 7: LNG imports to Europe p. 142

ABSTRACT
L'Europa, il "Corridoio del Sud" e il ruolo dell'Italia

L'avvento del 20° secolo ha contribuito, assieme allo sviluppo di un'economia sempre più di entità globale, ad aumentare la distanza tra risorse energetiche e consumatori. Produttori e clienti finali sono rispettivamente ridotti e aumentati, creando così una contenuta quantità dell'offerta anche se, allo stesso tempo, un aumento della domanda di energia. L'energia e il suo commercio si sono evoluti in tal maniera che oggigiorno, assieme ad altri beni e servizi, fanno parte di quell'insieme di attività che compongono l'economia internazionale, includendo in questo modo tra i loro caratteri fondamentali i concetti di import ed export. Questo meccanismo risulta necessario in modo tale da garantire ad ogni attore che opera nel mercato internazionale la sicurezza di approvvigionamenti per il mercato interno e in egual modo permette di dare la possibilità agli stessi di beneficiare di profitti dalla vendita di energia. Tutto ciò va a completare un modello che comprende in egual misura azioni politiche che questi attori intraprendono in modo da assicurare una certa stabilità alla propria bilancia commerciale. Nasce così il concetto di sicurezza energetica, che si riferisce, in una delle sue accezioni più semplificate, alla possibilità di acquisire rifornimenti energetici a prezzi ragionevoli[1]. In questo senso, da una parte si mette l'accento sul concetto di affidabilità (reliability) dell'approvvigionamento di materie prime energetiche: dalla sua reperibilità nel mercato, all'attendibilità del produttore e del consumatore. Dall'altra, all'elemento della ragionevolezza economica (affordability) di questi approvvigionamenti: riferendosi cioè al fatto che le variazioni del prezzo di mercato non siano tali da destabilizzare le economie.

Partendo da questi presupposti di carattere economico-politico, ciò che questo lavoro in prima istanza si propone di fare è di analizzare nei casi particolari quanto possano incidere determinate dinamiche nel mercato dell'energia. Specificatamente sarà preso in considerazione il mercato del gas, a cui la comunità internazionale sta dando particolare attenzione, viste le recenti problematiche sorte nell'acquisizione dei combustibili fossili, che in certi casi hanno compromesso la loro trasportabilità e la sicurezza degli stessi approvvigionamenti. Allo stesso modo, considerando il potenziale che questa risorsa possiede, cioè la sua peculiare caratteristica di essere una fonte ad alto valore energetico ma che allo stesso tempo risulta essere la più pulita tra i combustibili fossili, si cercherà di individuare se lo sviluppo di un'efficiente sistema gassifero a livello comunitario possa essere utile al raggiungimento degli obiettivi in campo energetico che l'Unione Europea si è prefissata. Inoltre, questa tesi si prefigge di tracciare una visione delle circostanze che delineano

[1] Y. Yergin. Ensuring Energy Security, in "Foreign Affairs", 2006, pp. 69-82

oggi questo singolare mercato, facendo riferimento in particolare ai rapporti sia tra attori governativi sia non governativi, cioè nella maggior parte dei casi, tra stati e/o imprese private, considerando infine le implicazioni di carattere geopolitico di questi rapporti.

In questo senso sarà importante dedurre che, non solo gli importatori sono in qualche modo dipendenti dall'acquisizione di energia attraverso varie fonti, ma che anche i maggiori esportatori hanno la necessità di proseguire in maniera continuativa la loro attività nel mercato dell'energia. In alcuni casi infatti, come in quello della Russia che fa dell'energia la fonte primaria del PIL, queste dinamiche risultano molto più rilevanti rispetto a molte regioni che diversamente basano la loro politica energetica sulle importazioni, anche se, allo stesso modo sviluppano risorse interne tali da creare un equilibrio atto a far fronte ad eventuali crisi dei rifornimenti. Da un altro punto di vista quindi, sicurezza energetica significa garantire nel tempo un mercato finale per le proprie risorse[2]. In questo senso, sempre più spesso oggi, anche osservando gli eventi internazionali che tendono a destabilizzare le economie di interi paesi o regioni che poggiano sull'energia, gravano in egual misura sia l'entità delle importazioni sia delle esportazioni, creando una sorta di dipendenza reciproca tra le parti, anche riconosciuta come "doppia dipendenza".

In secondo luogo, un ulteriore presupposto su cui questo lavoro si basa è il valore che oggi ha il concetto di diversificazione. In particolare, da una parte può essere intesa come differenziazione dei settori produttivi dell'economia di un determinato paese o regione, favorendo lo sviluppo di settori energetici alternativi; in un altro senso, il concetto può far riferimento alla possibilità che gli attori hanno di fare affidamento su fornitori diversi da quelli tradizionali. In questo caso i soggetti si trovano di fronte ad un vero e proprio "trade-off", in cui sarà necessario valutare costi e opportunità, partendo dal presupposto che un mercato ricco di domanda e offerta, cioè ideale, permetterebbe di generare profitti ai produttori e di abbassare il livello dei prezzi ai consumatori finali.

Da un punto di vista politico invece, i mercati internazionali sono istituzioni costituite per lo scambio di beni e servizi tra diversi attori, i quali richiedono la condivisione di alcune regole e valori. Si cercherà quindi di interpretare come queste regole siano intese dagli stati e dagli altri soggetti, soprattutto attraverso l'analisi dell'attività legislativa e direttiva dell'Unione Europea nel contesto del gas naturale. In questo senso, i decisori dovrebbero concentrare i loro sforzi sull'efficienza energetica e la diversificazione, senza però perdere di vista quelle che sono le linee guida che regolano il mercato energetico nel contesto UE e globale. L'accettazione di determinate decisioni politiche, o contrariamente il loro rifiuto, comporta conseguenze che si ripercuotono sulle attività legate all'energia, dall'upstream fino al consumatore finale.

[2] M. Nicolazzi. Pane e petrolio, in Limes, 2011, pp. 217-228

Con riferimento a quanto detto quindi, i rischi legati all'andamento delle relazioni economiche tra i vari attori sono strettamente correlati alle decisioni politiche a livello nazionale e internazionale. Le ripercussioni negative che posso derivare da determinate scelte di carattere politico ed economico spesso incidono in maniera diretta sulle economie dei paesi. In questo senso, l'importanza dello sviluppo delle infrastrutture per il trasporto del gas, elemento vitale nel settore, e le nuove frontiere che si stanno delineando in tal senso, assume proporzioni sempre maggiori.

In secondo luogo, un'analisi di matrice economica sui prezzi del rapporto di scambio e le eventuali ripercussioni sulla domanda e sull'offerta nel contesto prettamente europeo, sebbene gli attori che operano nel suo territorio sono globali, saranno tenute in considerazione in modo da individuare se e in quale misura hanno condizionato l'andamento degli scambi a livello regionale e mondiale.

L'impatto globale che il mercato del gas naturale ha assunto, accompagnato da improvvise fluttuazioni della domanda, rende l'analisi di tali sviluppi e la definizione della situazione attuale degli andamenti di mercato una questione complessa. Se infatti previsioni del decennio scorso indicavano le necessità di una sorta di "corsa al gas", in modo da poter assicurare adeguata autosufficienza energetica per le nazioni o le regioni europee, oggigiorno si assiste allo sconvolgimento di tali proiezioni, che infine in questo lavoro si è tentato di ridefinire. Ciò che quest'analisi quindi si propone di fare è osservare, attraverso un'indagine di carattere geopolitico ed economico, con particolare attenzione all'Unione Europea e all'Italia, se nel corso degli ultimi anni ciò che si è verificato nelle dinamiche di scambio tra attori internazionali sia una manifestata diminuzione di offerta di gas naturale o, diversamente, ciò che maggiormente si è ridimensionato rispetto ad andamenti precedenti sono i consumi, cioè la domanda finale. Inoltre, l'analisi della rilevanza che questi recenti trends hanno a livello comunitario: lo sviluppo di una politica energetica comune ha rallentato lo sviluppo del settore del gas naturale a causa di effetti negativi di mercato o l'imprescindibile percorso verso un piano energetico comune è comunque perseguito?

In questo contesto il lavoro si prefigge di analizzare lo sviluppo di una delle fonti di approvvigionamento alternative per l'Europa, che comprende un'area ancora non imperversata dalla presenza russa, il sud-est europeo. In più, un'osservazione dei benefici che lo sviluppo di determinati progetti in tale regione possono apportare al mercato europeo (e italiano). In particolare si analizzerà il progresso di un gasdotto di lungo corso, che più volte ha cambiato forma, percorso e denominazione, il "Corridoio del Sud". Un gasdotto che consentirà all'Europa di aprire i propri confini energetici a nuovi attori, come l'Azerbaijan e la Turchia, e allo stesso tempo lasciare spazio a nuove dinamiche di partenariato e cooperazione, almeno sul piano dell'energia.

Attraverso un accurato studio di fonti accademiche e d'inchiesta giornalistica, questo lavoro si prefigge di individuare come i rapporti di dipendenza energetica dell'Europa, e in particolare della regione del sud-est, cioè la più toccata da alcune particolari dinamiche in campo energetico soprattutto nei rapporti di dipendenza con stati extra-europei, possano mutare l'attuale condizione del mercato del gas comunitario. E' necessario quindi tenere in considerazione l'attuale condizione della domanda e dell'offerta del mercato del gas naturale in questa regione; successivamente particolare attenzione sarà data al processo di acquisizione di nuovi rifornimenti in quell'area.

L'obiettivo di questo lavoro, in conformità con gli obiettivi che sono stati evidenziati a livello comunitario, è l'individuazione di un modello efficiente per il raggiungimento dell'autosufficienza energetica del sud-est Europeo, senza precludersi inoltre di valutare la possibilità per alcuni attori di poter espandere i propri orizzonti al di là dei confini nazionali.

In particolare, il primo capitolo darà una visione d'insieme dell'attuale condizione degli approvvigionamenti europei di gas naturale, evidenziando gli attori in gioco: la Russia come potenziale presenza egemonica nel mercato europeo; l'Azerbaijan come suo principale punto di riferimento nella corsa alla sicurezza europea del suo sud-est; la Turchia come pedina fondamentale nel percorso del "Corridoio del Sud" dalle riserve azere al cuore dell'Europa, fino in Italia. Particolare attenzione sarà data alla spiegazione delle attuali relazioni tra questi principali soggetti, le cooperazioni e gli accordi esistenti, compreso il grado d'influenza che tali dinamiche possono esercitare sui vari snodi che compongono il "Corridoio". Inoltre, si è ritenuto ugualmente necessario individuare la "supply chain" del gas, come si snoda tale catena all'interno dei vari settori produttivi di un paese, aiutando così ad una più chiara comprensione della situazione del mercato del gas oggi.

Diversamente, il secondo capitolo si propone di mettere in luce l'operato dell'Unione Europea in campo energetico e in particolare l'importanza che essa da al gas naturale. In questo senso, è necessario sottolineare l'evoluzione storica dei vari organi europei che operano nel settore energetico a partire delle prime iniziative, come la CECA, fino ad arrivare alle ultime importanti tappe, come il TEN-E (TEN-G nel settore del gas) e i tre "pacchetti sull'energia". Specifica attenzione viene data all'individuazione delle diverse modalità con cui attori europei ed extra-europei accolgono direttive, comunicazioni e regolamenti della comunità. In questo modo è possibile osservare che il grado di obbligatorietà di alcuni provvedimenti non sempre viene interpretato alla stessa maniera da tutti i soggetti, e in particolar modo nel campo dell'energia, settore ancora insufficientemente articolato per poter dar vita ad un sistema unico e uniformemente percepito. In ultima istanza, il capitolo cerca di individuare le mosse sul piano dei finanziamenti e degli investimenti che comprendono il coinvolgimento di istituti di investimento comunitario, come

la BEI, che prendono parte all'attività di supporto economico delle infrastrutture del gas e in particolar modo nel contesto del "Corridoio del Sud".

Il terzo capitolo, successivamente, cerca di identificare le dinamiche di carattere politico-strategico ed economico che si delineano attorno all'individuazione di nuove fonti di approvvigionamento. Un'osservazione da un punto di vista regionale, quello del sud-est europeo appunto, ha dato modo di analizzare l'entità del progetto in questione (il Corridoio del Sud), osservando da vicino, da un punto di vista maggiormente tecnico, la capacità del gasdotto e l'ammontare dei benefici che tale infrastruttura può portare all'Europa e non solo. Inoltre, si è cercato di scoprire quali relazioni leghino determinati attori, soprattutto al di fuori del contesto economico, cercando cioè di individuare le implicazioni sul piano politico che lo sviluppo del progetto comporta. Un'attività prettamente focalizzata all'individuazione dei costi e dei benefici, non solo in termini monetari, dei quali gli attori comunque devono tenere in considerazione nell'evoluzione di un progetto che tocca più nazioni. Di certo, argomento affrontato in ugual misura in questo capitolo, i contratti delle forniture di gas e le recenti oscillazioni dei prezzi in altri settori energetici hanno un ruolo chiave nel delineare determinate dinamiche. La crisi Ucraina, il crollo del prezzo del petrolio e conseguentemente del rublo, sono tutti elementi da tenere in considerazione se si vuole comprendere a fondo quali sono le evoluzioni del mercato internazionale del gas, che va a influire in egual misura sulla buona riuscita di progetti come il "Southern Corridor".

Una volta delineate le principali dinamiche che a livello regionale vanno a caratterizzare il particolare caso del "Corridoio del Sud", il capitolo quattro si prefigge l'obiettivo di identificare possibili fonti alternative di approvvigionamento per il gasdotto. Bisogna considerare infatti che, nel caso di un aumento della domanda improvviso dovuto a determinate stagioni rigide, ma anche in presenza di variazioni nel medio-lungo periodo e quindi più graduali, mantenendo quindi il trend di domanda e offerta sostanzialmente invariato, la possibilità che ulteriori quantità di materia prima debbano essere trasferite attraverso il gasdotto aumentano considerevolmente. Contemplando questa eventualità quindi, il capitolo cerca di analizzare innanzitutto le possibilità di un ampliamento della capacità del "Corridoio" ma anche l'atteggiamento che gli attori coinvolti nel progetto possano avere nell'accogliere nuovi rifornimenti, e quindi nuovi soggetti, alterando in tal modo il livello di sicurezza energetica delle nazioni interessate. In questo senso, il Nord Africa, il Medio Oriente, Israele, Cipro e altre nazioni caucasiche devono essere tenute in considerazioni nel caso quell'ipotesi si verificasse.

Inoltre, in questa parte si intende individuare la possibilità per l'Europa di fare ricorso ad un maggiore utilizzo di fonti alternative comunque legate al gas naturale, che in questo modo vanno ad

abbracciare paesi che tutt'oggi non sono partner energetici europei, anche se a volte sono parte integrante di essi. E' il caso della Spagna per esempio, la nazione che più ha valorizzato il gas naturale liquefatto (GNL) e che può fare affidamento sul maggior numero di terminali per la rigassificazione in Europa. In questo senso, il GNL può dar man forte alla "corsa alla diversificazione" che l'Europa ha intrapreso da qualche tempo e che in questa parte del lavoro viene analizzata. In particolar misura inoltre, la comparsa sulla scena internazionale della nuova frontiera del metano, cioè dello "shale gas" americano, è stata precisamente analizzata nell'ultima parte del capitolo. Si è tentato di stabilire se questo nuovo tipo di risorsa energetica potrà cambiare in qualche modo l'andamento del mercato del gas o se, al contrario, è destinato a rimanere solo una potenziale sfida.

L'ultimo capitolo infine, il quinto, cercherà, attraverso un'osservazione della condizione attuale del mercato, di analizzare la situazione in tema di gas naturale in Italia, tentando quindi di dare luce a valide alternative future. In particolare, ci si è prefissato di individuare lo stato delle infrastrutture, la condizione legislativa su cui poggia il sistema gassifero, le iniziative e i progetti in corso. In seguito, particolare attenzione è stata data alla definizione del ruolo dell'Italia all'interno del contesto del "Corridoio del Sud". Sono state quindi osservate principalmente il susseguirsi di attività che stanno attorno alla costruzione di un gasdotto che potrebbe permette di cambiare le sorti energetiche del paese, il "Trans-Adriatic Pipeline" (TAP). E' stata valutata inoltre l'ipotesi di considerare altre fonti come possibili risorse complementari del sistema energetico italiano, siano di altra origine fossile, siano da ricercare su scala geografica più vasta.

A conclusione di questo lavoro, considerando la complessità e l'articolazione delle diverse sfaccettature che caratterizzano il mercato comunitario ed internazionale del gas, si cerca di riepilogare quali possano essere i caratteri che più andranno ad incidere nella regione in questione, il sud-est europeo. In questo contesto, la complessità delle relazioni internazionali che si configurano in ambito energetico rende l'argomento un interessante caso di studio, di cui analizzare lo scenario geopolitico che ne risulta e l'insieme delle interrelazioni che i vari attori instaurano al fine di assicurarsi l'importante elemento della sicurezza energetica.

Sicurezza energetica quindi, che non riguarda soltanto la capacità di una nazione di acquisire, attraverso transazioni monetarie o finanziarie, un determinato quantitativo di fonte energetica, ma che diversamente deve tenere in considerazione la possibilità che alcune problematiche si sviluppino: il terrorismo, l'instabilità politica degli attori internazionali, l'entità di esportatori o importatori presenti nel mercato, problematiche di natura nazionale, preoccupazione derivata dall'incertezza degli approvvigionamenti, rivalità geopolitiche e molto altro. In questo senso, visti i

recenti sviluppi in campo internazionale la maggiore preoccupazione oggi è rivolta verso la possibilità di sfruttare nuovi giacimenti e di conseguenza includere diverse fonti dislocate in aree prima difficilmente raggiungibili.

E' oltremodo importante, conseguentemente, analizzare l'andamento della domanda oltre che dell'offerta: recenti previsioni hanno dimostrato, diversamente da quanto precedentemente esposto dagli esperti, l'appiattimento del trend dei consumi nei prossimi decenni, almeno per ciò che riguarda il mercato al dettaglio. E' quindi rilevante verificare se i consumi del settore industriale saranno altrettanto negativi e se questo ambito sarà cruciale per i futuri andamenti dei consumi. Ad ogni modo, l'evoluzione del mercato fino ad oggi, o almeno fino agli ultimi anni, ha dimostrato che un rialzo della domanda in presenza di un'offerta contenuta, almeno per il mercato europeo, frammentata tra Russia, Nord Africa e Nord Europa, abbia dato svariate problematiche dal punto di vista sia politico sia delle forniture. Allo stesso tempo, come sarà dimostrato in conclusione di questo lavoro, l'offerta contenuta di gas, distribuita per pochi attori internazionali, ha dato la possibilità ad altri nuovi soggetti di entrare nel mercato grazie alla scoperta di nuove tecniche e giacimenti come nel caso dello shale gas statunitense, o di riscoprire l'importanza di alcuni assi di collaborazione internazionale tra vecchi partner europei, come nella regione del Caspio e del Nord Africa. Il risultato è che oggi l'attenzione verso la globalizzazione, anche del sistema energetico, in cui l'Europa gioca troppo spesso il ruolo di solo importatore, è quindi necessaria se l'intento di accrescere la sicurezza energetica vuole essere perseguito fino in fondo. In questo contesto, dinamiche di una lontana Guerra Fredda sembrano a volte tornare agli onori della cronaca, in cui tradizionali e nuovi soggetti internazionali interagiscono confrontandosi sul piano politico, economico e strategico, in modo da potersi assicurare il maggior numero di risorse energetiche primarie.

Da una parte quindi, paesi dalle vaste risorse energetiche (soprattutto di combustibili fossili) si sforzano di mantenere stabile o accrescente il livello di domanda di energia per sostenere le loro esportazioni. Dall'altra, paesi che fanno maggiormente affidamento sulle importazioni, l'Europa quindi in primis, si preoccupano delle possibili problematiche che un'interruzione della fornitura di gas potrebbe causare alle economie e bilance commerciali nazionali. Il concetto di dipendenza energetica è un elemento chiave che influenza il delinearsi delle attuali politiche energetiche degli stati europei, e dell'UE di conseguenza. Di certo, sul livello legislativo, l'Unione Europea ha dimostrato, e in questo lavoro è evidenziato, che azioni mirate a costruire un sistema energetico coeso e unificato sono tra i principali caratteri a cui dare rilevanza per la costruzione di un mercato

europeo del gas, atto a garantire maggiore sicurezza degli approvvigionamenti attraverso una rete di cooperazione comunitaria.

INTRODUCTION
Natural gas: its relevance and its role

We can start from the assumption that without abundant and constant energy procurements today's society could not progress. All the challenges, opportunities and discoveries the current world is dealing with, would not be possible without it. Energy is the main issue to dispose in order to produce goods and distribute services, as well as to transport them to the final consumers. In this sense, the linkage between welfare and energy consumes is at the core of the nations' interest in order to permit the development of individual and collective activity, in all the fields. States' GDP and energy are strictly connected to each other, contributing together to the development of the society improvement. As a witness to this, on the contrary, low energy consumption circumstances contribute to highlight underdevelopment and inequalities in a global scale.

In this sense, to individuate adequate methods in order to guarantee enough energy supplies to its citizens has always been one of the main governments concerns all over the world. With the advent of the globalization, the inclusion of energy dynamics on the international ground has contributed to create an articulated scheme of exchange. In this vision energy, once having exploited existing reserves and being produced, can be exported or, on the contrary, imported. In this sense, many actors are involved in this process: producing countries, usually energy-rich territories, transit countries, those in which energy pass through, and finally importing nations or regions, which are interested in covering domestic deficiencies in the energy field.

As highlighted by expert's projections, some energy sources constitute the group of the so-called non-renewable energy and, at the same time, the most contended sources globally. Is in fact the fossil fuels case, including the natural gas, to which this work's focus is particularly conveyed.

As a first point, it is necessary to explain why this particular energy source is at the hearth of international community discussion. Natural gas, usually mainly composed by methane, has huge advantages: it is the less polluting existing fossil fuels and for this reason, where natural gas is easily available, it has substituted other fossil fuels for heating uses. Secondly, the recent development of the combined-cycle technology has enabled the operators to increase the efficiency of thermal power plants, permitting the large use of gas even in the electricity sector.

However, if from one side its low polluting emissions and its high productivity has permitted to natural gas this recent positive evolutions, from the other, natural gas has some problematic implications in its use. In this sense, natural gas has a huge disadvantage: it is difficult to transport, largely affecting the economic aspect. To trasnfer gas in fact, a huge and costly infrastructure

network is needed, reflecting on the necessity for the actors involved to undertake scale economies in order to support high fixed costs. As a consequence, only where large amount of natural gas is destined it is possible to recover the construction expenditures for a distribution gas grid. Certainly this question has long keep the gas to remain an energy source only affordable in the short distances, even though, current developments, as this thesis will also underline, seems to have change those circumstances. Historically anyway, natural gas global trade have been developed mainly through the use of pipelines, most of which existing in Europe, the world's main gas importer.

Due to this, the European gas network has increasingly became more dense, forcing various projects developed in a single area to pose each other in competition, as recent developments have shown. One of this work's aim indeed, is to individuate which of the latest possibilities to construct a gas supply network for the European Union is the most favorable, enabling it to guarantee its citizens enough procurements. In this view, specific attention will be given to the south-east European context, in which EU and other actors' attentions are colliding on the development of the "Southern Gas Corridor", a pipeline which can possibly occupy the gap, in term of infrastructures, existing in the area. In this context, political issues in the development of relations among governmental and non-governmental actors; and economic implications, due to the large investments needed to pursue those objectives, are at the core of this thesis' analysis, according to the importance those questions have in the international ground nowadays.

In this scenario, global demand and supply represent a crucial point: individuate trends, geopolitical implications that influence over gas procurements, economic particular dynamics that modify actions, and finally academic and independent future energy perspectives, are necessary to be taken into account in order to give an effective conclusion that trace the current situation of the gas market in Europe.

For this reason, to highlight causes and possible consequences of the recent European Union's research of energy security, that includes the broad of activities needed to acquire enough energy sources at an adequate price, is fundamental in order to individuate strengths and weaknesses of the European, and particularly south-east Europe, gas market situation. Dependence is the key word in the recent evolutions of the energy sector, which has brought Europe to increase its investments, especially in natural gas transportation infrastructures, even though not always market favorable conditions supported those actions. In this sense however, the EU has still a long way to go as well as many points to fix, if a cohesive, interconnected and cooperative gas market wants to be created.

This work's beginning tries to trace an overview of the current situation of the European Union's natural gas system, highlighting which are the most relevant actors in this articulated game: Azerbaijan as the major EU supporter in its progress toward assuring the region adequate gas supplies for the south-east regions; Turkey as fundamental pawn in the passage of the Azeri gas toward Europe; and Europe, with its south-east countries' challenges and opportunities, including Italy, Greece and the Balkans. Particular attention will be given to the explanation of those existing relations among these regions, cooperation activity and signed agreements, including an investigation on how much those relationships could affect the development of the so called "Southern Corridor". Besides, it has been necessary to analyze the natural gas supply chain, how it works in each single productive sector, helping so us to understand how natural gas market acts in the international ground.

The second chapter, differently, has the aim to highlight the European Union actions directed to construct a communitarian natural gas market. In this sense it has been useful to underline the historic evolution of the group of authorities that operate in the energy sector: from the CECA constitution until latest important phases, like the creation of the TEN-E (TEN-G for the gas sector) and the EU's three "energy packages". Specific attention is given in the understanding on how international and regional actors welcome EU's directives, communications and regulations. In this sense, it has been highlighted that those legislative actions have been not always perceived with the same approach from all the countries, particularly concerning the energy field: yet an insufficiently articulated sector which needs a more cohesive and unified understanding. Finally this chapter wants to individuate financial actions and investments provided by this European complex energy policy framework, which consist of the engagement of other EU institutions like the European Investment Bank (EIB).

Successively, the third chapter's goals are to pinpoint political, strategic and economic dynamics which characterize the research of new gas supplies for the EU. A regional approach, the south-east Europe one, has given the possibility to closely analyze the project's entity. An observation from a more technical standpoint, in order to understand the "Corridor's" capacity and the benefits it can bring to the European territory and to others. Moreover, it has been tried to identify which kind of relations are tying actors around the project, trying to distance from the political ground, but rather focusing on economic implications that the development of the "Southern Corridor" includes. A cost and benefits analysis has been made, going beyond a single economic standpoint, but considering also political factors, which actors should take into account if an adequate development of the "Southern Corridor" wants to be pursued. Certainly, supply contracts and prices fluctuations

are two fundamental elements to consider if a complete scheme wants to be highlighted. The Ukrainian and the oil prices crisis, as well as the ruble fall represents a crucial point to analyze in order to better understand the evolution of the international natural gas market, which, in turn, reflects its positive and negative implications on the development of the "Southern Corridor", as well as to south-east European energy security.

To continues, chapter four, once having identified the sources of the "Corridor's" supplies, purposes to identify further alternatives and options for the project gas procurements. It might be considered indeed that a sudden increasing demand, caused by particularly cold seasons, but also long-term variations, in which demand and supply do not fluctuate drastically, further gas supplies should however be included in future, according to the EU and the Azeri plan, but also considering other possible variations driven by unexpected geopolitical changes. In this vision the chapter's aim is to pinpoint whether the parts accept or not the inclusion in the project of new actors and so of new supplies, altering in some way the energy security degree of the countries involved. In this context, it will be taken into account the possibility to include close and energy-rich regions like North Africa, the Middle East, as well as nations like Israel and Cyprus.

Moreover, this part of the work also purposes to consider the recourse of some alternative options, however related to the natural gas sector even if representing unconventional methods to obtain it or diverse way to transport it. In this vision the inclusion of other actors should be taken into account, both from farer areas and closer EU partners. It is the American's shale gas case for instance, but also the LNG market global expansion and the inclusion of LNG-terminal rich countries. It is important in this view trying to pinpoint if those new options could represent valid alternatives or if they are relegated to remain only unexploited potential challenges.

Finally, the last chapter, the fifth, tries, through a careful observation of the gas market, to analyze the Italian natural gas sector's situation. Particular attention is given to the Italian gas market condition, the nation's legislative ground, as well as recent initiatives and work-in-progress projects, mainly focusing on the "Southern Corridor" question. Besides, a precise investigation has been carry on in analyzing the situation of a possible game-changer for the Italian gas sector and economy, the "Trans-Adriatic Pipeline" (TAP), without neglecting to identify other possible alternatives in term of gas supplies for the nation.

To conclude, considering the complexity and the articulation of the today's global natural gas market, it has been tried to pinpoint which particular dynamics could affect the development of the south-east region gas sector. Doing so, it has been necessary to take into consideration the intricacy of current international relations, the legislative ground, as well as geopolitical questions, economic

implications and strategic approaches that some actors consider as essential in order to assure to states or region’s energy security.

ENERGY FOR THE EUROPEAN UNION
The importance of the gas sector: the current situation

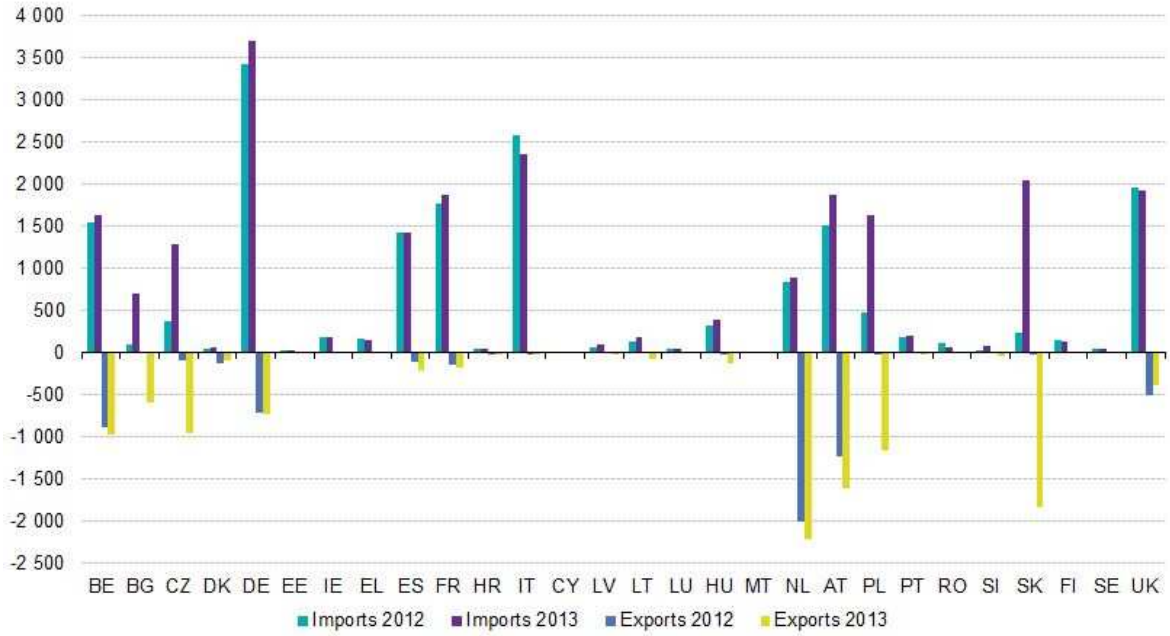
1.1 The EU energy dependence

To better understand the European Union's gas sector situation is useful to take as a starting point some data which have been collected from various sources, partly official, as EU working papers and communications, partly through the analysis of recent scholars works. To begin, it might be highlighted that in its entirety, European Union with its 28 member states, is the world's largest energy importer: about 55% of its energy supply come from importations[3]. What is remarkable, taking into consideration the natural gas context, is that it imports the 64% of the whole European Union gas supply[3]. It is quite clear from this few initial data that EU's gas production does not permit it to be autonomous for its energy consumption. Natural gas comprised 24% of the EU's primary energy consumption in 2011 then, after two years of decline, its consumption remained relatively stable over 2013 and 2014[3]. Preliminary data shows that consumption and net imports in 2013 were approximately at the same level as in 2012 (+1% and +1.3% year-on-year), with consumption at 13% below the peak levels of 2010, when a sudden cold winter have reflected an increasing gas demand[4]. Differently, some data show a drop in consumption of about 22% in the first quarter of 2014 and of net imports[5] by 8%, compared to the same quarter in 2013 with warm weather playing an important role. The drop in consumption in the first quarter of 2014 came after an almost 5% drop in consumption in the fourth quarter of 2013 relative to the same quarter the year before, again largely related to the mild weather[4]. The trend for gas demand and consumption is expected to grow to almost 30% by 2030[4] although gas demand trends remain uncertain. However, the European Commission foresees that the EU will import over 80% of its natural gas needs by 2030[6]. If we consider the preoccupation and the consequent reduction of use of nuclear power and possible prohibition on the usage of other unconventional gases and coal, as well as the unpredictable growth of renewable energy, this could anyway bring the EU to increase its natural gas imports in the coming years.

[3] Eurogas. Long Term Outlook for Gas Demand and Supply 2007-2030, 2010, p. 5 – www.eurogas.org.
[4] European Commission. Quarterly report on European Gas Market. Volume 6 and 7. Directorate-General for Energy, Market Observatory for Energy, 2014. - http://ec.europa.eu/energy/observatory/gas/doc/201410_q3-4_quaterly_report_gas_market.pdf
[5] Net imports is the difference between gas import and export (edn)
[6] European Commission. Market Observatory for Energy, Key figures, 2014 – www.europa.eu

In this background, another important factor is needed to be pinpointed: Russia is the current key supplier of natural gas to Europe. It counted for 34% of EU natural gas imports and it covers most of the south-east European markets. Some other states, which are not always included into the group of the most advanced countries but however rich in energy resources, as Algeria for instance, which is the third-largest supplier, are the other main exporters to the European territory.

Fig. 1 – EU member states natural gas imports and exports (2012/2013)



Source: European Commission (y: bcm – billion cubic meters; x: country positive: imports; negative: exports)

In order to create a more efficient supply, Russian companies, supported by European companies which also are experiencing the Eurasia energy market through operational activities, have developed an articulated network to transport natural gas for long distances with the purpose of reaching finally the European ground. For sure, natural gas will play a significant role for Europe-Russia relations for the future, considering consistent investments and political relations between these two regions. It is important anyway to take into account that the total amount of importations and the selection of the country from which import, vary from nation to nation and close relations with Russia does not always represent the rule. Spain, for example, does not import natural gas from Russia but, on the contrary, the Italian natural gas market relies on Russian for the 35% of its inner market. However, some data shows that while some large consumers such as Germany, France, the Netherlands and Poland registered growth in consumption in 2013 compared to 2012

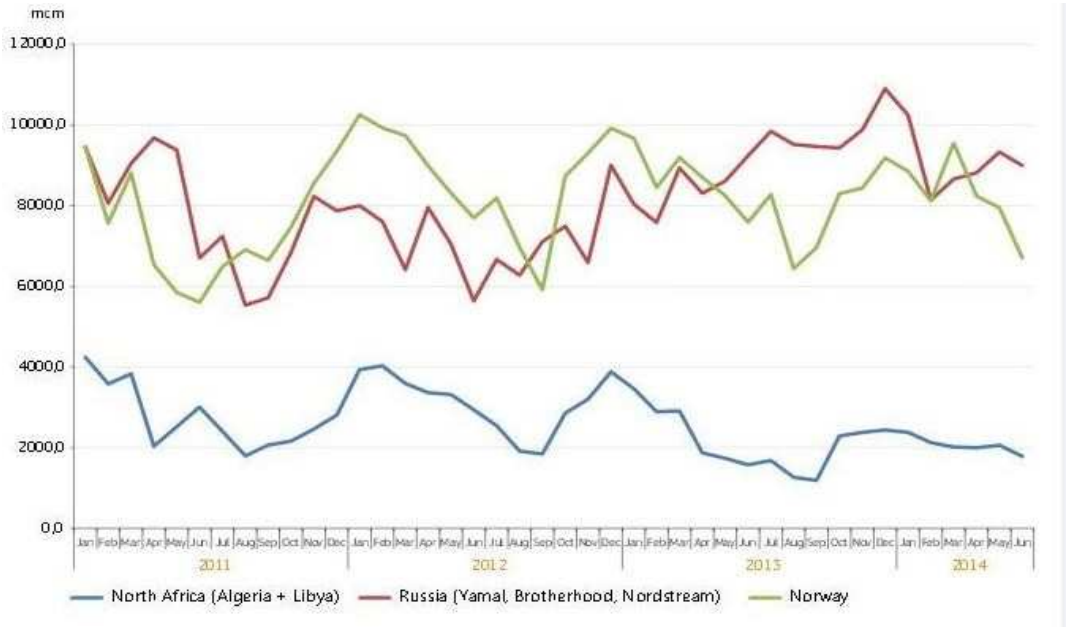
(+9%, +3%, +2% and +1%, respectively), others like Spain, Italy and the UK saw a drop in consumption (-8%, -6% and -1%, respectively) in the same period4 . These two different approaches in managing national natural gas needs can depend on the facility to acquire natural gas of these two examples, but also depend on significant variations in gas demand across the EU, which sometimes imposed each state to follow different focused energy policies, sometimes imposed by diverse domestic economic sector's consumption (industrial, household, etc.). For instance, the opening of the "Nord Stream" corridor7 made Germany one of the main Russian partners. Differently, in the Southern Europe case, the question has remained open for a long time, due to the discussion on the development of the "South Stream" pipeline8 and the consideration of other relevant new projects, like the "Southern Corridor". The discussion on this last point is the main purpose of this work. What is relevant here is that consequences after decisions taken inside the European Community differ from state to state and concern single policies in order to assure national interests, although the European Union is moving toward cooperation in order to establish a common energy ground. Having a look to the latest developments, they probably bring us thinking that Russia will continue to exert significant influence over Europe's energy security, but recent economic events has shown that an in-depth analysis is needed. It is necessary to notice as a starting point that many member states have signed bilateral energy deals with Russia which apparently have increased the dependence degree with Russia in the long term. It is the Italian and Germany case, the two main importers of Russian natural gas and those which both have negotiated for deals with Russia for future natural gas supply, which obligate them to keep good relation with Russia today. However, it is important to consider how long these contracts obligate the parts to keep polity relations.

In this view anyway rising Russian gas supply does not necessary mean gaining (energy) security, relying on dependence to a unique nation and not investing in searching other alternatives. Looking around to other options is a necessary action for Europe to avoid possible supply reduction, caused for instance by political tensions, which can put energy security in jeopardy. To establish a national or common energy policy may means to develop an efficient planning, based on the diversification of the gas supplies in order not to create an energy market influenced by the Russia and Gazprom presence.

[7] The North Stream is a gas pipeline that pass across some central and northern European nations and finally reaches Germany - http://it.wikipedia.org/wiki/Nord_Stream

[8] The South Stream is a planned gas pipeline that would pass through some southern Europe states starting from Russia - http://en.wikipedia.org/wiki/South_Stream

Fig. 2 – Physical pipelines flowing into EU (2011-2014)



Source: Bentek Energy (mcm: Million Cubic Meters)

The analysis of the Euro-Russian skeptic but collaborative relations scenario can enable us to pinpoint how much influence the Russian Federation exercise on the development of the Europe natural gas market, especially in the case of Southern-Europe countries.

Despite agreements and contracts signed, Europe is now not having any secure answer on its future natural gas procurements, although they continue to knock the Russian doors. However, some experts claim that Europe remain Russia's main energy market and this has led Russia to exercise more caution in dealing with EU countries because they represent the biggest source of foreign income for the state. Certainly, as said, they likely exert a certain degree of influence over European businessman and politician and it is necessary to consider that Russia probably would prefer to keep those relations safe[9]. The advent of the Ukrainian crisis did not change the vision of Russia's ruling class. It seems reflecting the rigidity of the old soviet state, in fact, former satellite states such as the Baltic and Central European Republics remain close into the category of smaller, weaker and needy of Russian support in the economy and in the energy sector. The development of the "North Stream" pipeline, which connect Russia with Germany cutting off the earlier 80% of Europe's

[9] Congressional Research Service, Europe's Energy Security: Options and Challenges to Natural Gas Supply Diversification, 2013, CRS Report for Congress.

natural gas imports passing through or departing from the Ukrainian territory, has completely changed the previous status quo.

1.2 The "Southern Corridor"

Despite this, what instead worries south-east European countries are those supplies that Russia has previously planned to send under the Black Sea to Bulgaria and then into other European countries with the construction of the "South Stream" pipeline[10], that now has turned to be a close competitor of the EU-led "Southern Corridor", conceived to transport natural gas from the Caspian and Central Asia regions to Europe. So, while Russia is trying to build pipelines that avoid passing through Ukrainian territory, in order to guarantee to Europe enough supplies without geopolitical complications, as well as ensuring profits from energy exportations, south-east Europe is searching for new alternatives in order to acquire natural gas even if it implies not to follow Russian projects. For Russia could be more profitable to construct and use two new pipelines, North and South Stream, instead of modernize Ukrainian's aging systems. In addition, it may be considered that some Russian actions may be aimed to frustrate European efforts of diversification as well as speed up contracts renewal.

Starting from the assumption that a Russian full ownership pipeline is not what Europe want to construct, the most probable option for transporting natural gas pass through the Caspian and Central Asia regions. The latest proposal is called "Southern Corridor", pipeline that would also connect other important projects, TANAP[11] and TAP[12], with the intent to reach south-east Europe regions and finally the Italian territory. But the initial enthusiasm and participation of national or private gas companies is now blurring due to some glitches on the way to achieve the final construction. Consequently it could be conceivable that south-east Europe's dependence on Russian gas supply is not going to reduce, at least in the short period. The works for the project are slowly proceeding with the initial negotiations, in the meantime, in mid-November 2007 Greek Prime Minister Kostas Karamanlis and Turkish Prime Minister Recep Tayyip Erdogan inaugurated a

[10] As in the coming pages will be explained, this pipeline now is supposed to pass through the Bosporus and then to the Turkish territory

[11] Trans-Anatolian gas pipeline - http://en.wikipedia.org/wiki/Trans-Anatolian_gas_pipeline.

[12] Trans-Adriatic pipeline - http://it.wikipedia.org/wiki/Gasdotto_Trans-Adriatico.

natural gas pipeline which connects the two countries, the ITG(I)[13]. This however represents the first effort to link Azerbaijani natural gas and the European territory[14], which had the initial purpose to reach Italy as the final connector to Europe. By now, only another alternative for the natural gas shipment through Turkey, Azerbaijan, Romania and Georgia have been planned (and signed the project by the part) in April 2010. The porpoise is to sell liquefied gas (LNG) from Azerbaijan to the EU through Georgia and Romania. The AGRI[15] project's goal, this is the name of the pipeline, would transport natural gas through a pipeline which connect Azerbaijan to the Georgian port of Kalevi, where it will be liquefied then shipped across the Black Sea and regasified at the Romanian port of Constantia.

Nevertheless, we need to underline that building and connecting many European southern states, including the most geographically expanded and economic relevant nations such as Azerbaijan, Turkey and Italy is not a simple issue. However what remain clear in all the hypothesis is that the most affordable and convenient option today is the exploitation of the Azerbaijani's Shah Deniz gas field, even though it is at the center of multiple controversies. This arrived at the same time that, in late 2012, Russia signed agreements with transit states for the construction of the "South Stream" gas pipeline, supposed to pass across the Black Sea and to arrive to the European markets. While in December 2012 Russia started the construction of an onshore portion of it in its territory. If we refer to the initial project, the pipeline was supposed to be transiting Serbia, Hungary and Slovenia to Austria, even though, according to some analysts, the pipeline was not economically viable[16] but necessary to let Russia maintaining its dominant presence in the gas market as main supplier for Europe.

What we assisted at the moment in which the project was proposed is a kind of resistance exercised by the EU on accepting the "South Stream" pipeline. As a witness to this with the approval of 2009 "Third Energy Package", TAP has obtained a privilege treatment in terms of legislation and regulation. EU guarantees to TAP the priority status due to Russia violation of existing agreements between some European states and Moscow. In fact EU legislation disposed that TAP should not dispose the participation of only one "owner" (in this case Gazprom), forcing Russian operators to

[13] Interconnector Turkey-Greece (Italy) - http://en.wikipedia.org/wiki/Interconnector_Turkey%E2%80%93Greece%E2%80%93Italy

[14] Edison Italia - http://www.edison.it/it/media/comunicati-stampa/2007-11-19-inaugurato-il-gasdotto-turchia-grecia-tassello-fondamentale-del-corridoio-itgi.shtml#printpage

[15] Azerbaijan-Georgia-Romania Interconnector - http://en.wikipedia.org/wiki/Azerbaijan%E2%80%93Georgia%E2%80%93Romania_Interconnector

[16] Congressional Research Service – Europe's Energy Security: Options and Challenges to Natural Gas Supply Diversification, 2013, Washington.

include other parties to join the project[17]. The European Union attitude looked like an attempt to block the construction of the "South Stream" pipeline, without considering that further developments had shown Gazprom as not the only owner, but for sure the one which own most the project, even because it invested for most. In the context of the "South Stream" construction, thanks to the European's so called "N-1 standard" regulation, that permit any member state to provide independently for its natural gas supply and management[18] as long as they ensure that their gas companies could deliver gas to costumers and could withstand a cut-off of gas from their largest single supplier[19], some countries (Bulgaria, Hungary, Austria) had already signed agreements with Gazprom in order to fast forward the project. However, in the aftermath of the Ukrainian crisis, the Commission has blocked all. Effectively those agreements permitted to break EU non–discrimination rules on the "public procurement"19 and finally Bulgarian government announced in June 2014 that it was suspending work on "South Stream". European Commission has later reaffirmed that the "South Stream" project does not conform to the 2009 "Third Package" of EU energy rules questioning the initial project in which Gazprom would have controlled the whole supply and transmission17. Thus "South Stream" has been suspended for some time, then coming to its abandonment at the end of 2014. These long-standing problems have probably brought President Putin to decide leaving the project, while from another point of view, it figured as quite clear that the European Union wish was guarantee the European possess of energy infrastructures, above all to permit to the Union's companies, most of them private[20], to invest in the energy sector and economy. Losing control of part of the natural gas supply would mean to impede the process of energy supply diversification and separation from hegemonic Russian presence in Europe to be developed. Besides, leaving to outsider the complete incorporation of European energy market would entail also loose political relevance in the international arena. Considering Europe attitude, it is not surprising the indignant reaction of President Putin when assisted to the European Third Package proclamation, which has lately reflected on the "South Stream" abandon.

Meanwhile, Russia's intentions to extend natural gas exports on the European market do not limit their attitude for an expansionist policy toward other directions, including defending its economic interests to develop a profitable energetic policy framework. In fact, Russia has signed a new long-

[17] Demostenes Floros. Tap e South Stream: i due pesi e le due misure dell'Europa, 26/06/2014, Limes – Rivista Italiana di Geopolitica, Repubblica, p. 2

[18] even if it does not say anything about the provenience of the resources (edn)

[19] Europa.eu, Presses releases database - http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:295:0001:0022:EN:PDF

[20] edn

term gas deal with China in May 2014. On the other hand, because of its annexation of Crimea, Russia has been excluded from what are the informal Group of Eight (G8) major industrialized countries, and will not be readmitted any time soon. The game to play now is on the Caucasus region, with part of which Putin has planned to create a Eurasian Union, including Belarus and Kazakhstan and hoping to add other former Soviet states[21]. Considering this, even if indirectly, Russia could remain one of the major suppliers of gas resources to Europe for many years to come, although the "South Stream" project has been abandoned.

At the same time, European energy companies are continuing to invest in Russia. A possibility is that, unless they are interrupted, EU-Russia energy relations will be purely transactional, concluded deal by deal by companies or issue by issue by government officials, without any political framework behind them.

Another current and crucial issue to pinpoint in the background of "Southern Corridor" progress, is about the latest agreements between Ankara and Baku, mainly concerning the energetic field. In October 2011 they signed key agreements on the gas transportation to the Turkish ground, highlighting Anatolia as main transition territory between Europe and Azerbaijan. With these agreements, put into practice since three years, Azerbaijan can directly sell natural gas to the European markets across Turkey, with the important pipeline project of Baku-Tbilisi-Erzurum (BTE)[22], alias "South Caucasus" natural gas pipeline, the first segment of the future "Southern Corridor". Furthermore, this has intended as the possibility for Turkey to become an energy central actor[23], although what miss is the western part of pipeline which can connect Turkey with other South European states[24].

In this context, despite EU now is developing the project, it can be considered as a failure for EU the 2013 decision of the Shah Deniz consortium to promote the construction of the Trans Adriatic Pipeline (TAP) to the detriment of the Nabucco pipeline, considered as the European Union's flag project. In fact, early EU efforts to promote what seemed to be the best way to separate itself from Russia dependence, has been dismantle by Azerbaijan, which had already carry on the Trans-Anatolian pipeline (TANAP) with Turkey, at least in the political ground. TAP would pass across Greece, Albania and then crossing the Adriatic Sea would finally arrive to Italy. Probably, one of

[21] David Buchan. Europe's energy security, July 2014, The Oxford Institute for Energy Studies - http://www.oxfordenergy.org/wpcms/wp-content/uploads/2014/07/Europes-energy-security-caught-between-short-term-needs-and-long-term-goals.pdf

[22] South Caucasus Pipeline - http://en.wikipedia.org/wiki/South_Caucasus_Pipeline

[23] An interconnection in which buyer and seller/supplier and demand converge. In the Turkish natural gas market, it could become a strategic encounter between Caucasian gas supplier (Azerbaijan) and South European clients. (edn)

[24] Greece is already connected with the ITG; Italy is not connected. (edn)

the main reasons of this decision is the fact that TAP represents a possible branch point toward the Balkan territory from which other states, such as Bulgaria, can be reached: this for sure means new clients and revenue for Azerbaijan. For the European Union, the Nabucco could have represented the first step toward the concrete realization of its purpose to fill the blank space in its south-eastern territories, which anyway it has been converted into the "Southern Gas Corridor". The pipeline would have directly connected Greece and Italy, following the idea to develop the Interconnector Turkey-Greece-Italy (ITGI), part of which already constructed in 2007 and that today provide to Turkey and Greece gas demand (even if not for the total amount).

What we assist now is a success on all the fronts for Ankara: whatever the decision will be taken by the Shah Deniz consortium, Turkey is the necessary interconnection between Azeri natural gas and the south-east European gas markets. This will give it a position of primary importance on the diplomatic and commercial side. As a witness to this, some data demonstrate that Turkey is the richest country in energy resources in the Southern Europe context, even though not coming from domestic production. Gas pipelines link Istanbul and Ankara with most of the biggest cities of the country; they import energy from Georgia, the Caucasus region and Iran. Moreover, a project for a huge pipeline that would connects Ceyhan and Tel Aviv, if constructed, can give the possibility for Turkey to receive natural gas also from Israel. This entire question will be analyzed in the following chapters.

1.3 The background

In the developing of the Corridor is now important for the south-east Europe countries to follow what established on the EU energy and climate policy goals, which are strictly connected with Europe's energy security problems. The main issue is about energy affordability, competitiveness and emission reduction, that means autonomy and sustainability[25]. In terms of energy supply, for the Mediterranean regions an elaboration of new energy security policies could represent the possibility to acquire a large amount of resources from the Caspian region countries, the most widely accepted possibility today. Energy imports dependence is a fact of life for the EU: the dependence of some of its member states on Russian gas supplies constitutes the EU's most acute vulnerability. In the progress of the "Southern Corridor" project, what is to remark is that, as said, a new actor is emerging in the international energy arena. Azerbaijan is one of the richest countries in

[25] See chapter two for an overview or recent European energy policies.

energy resources, especially in the gas sector, and it is becoming an important player for the Europe's energy security. According to the gas sector analysts' reports, the Azeri national reserves capacity is about 1,3 trillion cubic meters. Despite they are still inferior to other Eurasian competitors (mainly Russia), its geographical position makes Azerbaijan an important pawn in the foreground for the energy acquisition between Europe and the Caspian Sea. It represents one of the main options for Europe to shake off from Russian pressure[26]. Various programs for extracting and exploiting Azeri's gas are in progress, among the many, offshore gas field in the Caspian Sea in Azeri, Chirag and Guneshli made by the "Azerbaijan International Oil Company", Socar[27], and other groups' participation. This makes scholars think that relationships between Azerbaijan and south-eastern Europe could be much important than expected.

Fig. 3 – The Azeri's Gas Fields

Source: Limes – Rivista Italiana di Geopolitica

[26] Stefano Grazioli. Per l'occidente in Azerbaijan l'energia conta più della democrazia. 14/10/2013. Limes – Rivista Italiana di Geopolitica - http://temi.repubblica.it/limes/per-loccidente-in-azerbaigian-lenergia-conta-piu-della-democrazia/53042

[27] The Azeri's national gas and oil company - http://it.wikipedia.org/wiki/SOCAR

Certainly what we need to take into account is the enormous costs of extraction and the economic affordability in developing infrastructures for the Azeri Socar[28], costs that became suddenly affordable when some British-American investors (BP[29]) have been involved in the project. Considering that, at the same time, the American government supports the elections in 2013 of the current president Ilham Aliev without worrying too much about election riggings rumours[26], probably good businesses will be made in the Azeri energy sector. This sudden veer made by the Azeri government in favor the decision of exploiting the "Shah Deniz" gas field could be intended as strictly connected with the recent decision of Azeri's companies not to carry on with the Nabucco project. In fact, the exploitation of the Azeri gas fields, due to those latest investments made, has completely inverted the initial idea to develop Nabucco, supposed to start in the Iraqi or Iranian territory. Sanctions and distancing of the international community from a cooperative ground with Iran and Iraq are other main reasons of this final choice.

From a more global perspective, recent evolutions in the energetic field revealed to Europe some possible alternatives beyond the Ocean. Is the American's shale gas, an unconventional gas that apparently has all the support from the U.S government and financial institutions, at the same time it may represent the American concrete proposal to reduce Russian natural gas supplies to Europe. If true, to develop this possibility could be a very complex and long-standing process, considering the absence of liquefaction plants in the USA and scarce LNG terminal in Europe. Besides, problems of transportation due to the high selling costs make things even more complicated. Some legislation limits have also to be considered, unless the recent "Transatlantic Trade and Investment Partnership"[30] will be signed. Possible positive developments of this agreement anyway may have been already perceived by some Russian investors, reflected on the strategic approach between Russia and Asia, especially China, in energy and manufacturing field. From the United States side, the intent to penetrate European markets for the star-and-stripes shale gas is reflected on the

[28] Massimo Nicolazzi. Da Baku ai Pirenei. Azerbaijan, energia per l'Europa, prefazione del libro di Matteo Verda e Carlo Frappi. Azerbaijan, energia per l'Europa, 12/12/2014. Limes – Rivista Italiana di Geopolitica - http://temi.repubblica.it/limes/da-baku-ai-pirenei-azerbaigian-energia-per-leuropa/55696

[29] Amoco Corporation that merged in BP in 1998 - http://en.wikipedia.org/wiki/Amoco

[30] The instauration of free-trade agreements between USA and EU - http://en.wikipedia.org/wiki/Transatlantic_Trade_and_Investment_Partnership

maintenance of slow prices (2/3 dollars for Mmbtu[31]) against of higher production costs (5/6 for Mmbtu31)[32]. This peculiar question will be analyzed in chapter five.

Anyway, the last relevant chance for south-east Europe seems to be the development of a "Southern Gas Corridor", which was proposed by the European Commission as one of the main projects to welcome the Caspian region and the Middle East gas supplies in the "Second Strategic Energy Review"[33] in 2008. This set of policies included three main possible pipelines with the aim to reach the European territory: Nabucco, which is now failed; ITGI, which is partly completed; TAP, which has been approved; and White Stream which has been just a further proposal[34]. To open a fourth major natural gas corridor (the first three being the ones from Norway/North Sea, North Africa and Russia) likely be a measure of strategic importance not only for Europe but also for the existing transatlantic alliance as a whole. Moreover, connecting the winner European pipeline with the already started TANAP project, thus forming the full "Southern Corridor", can give the possibility later to expand and orient to other territories, on the poor natural gas reserves countries, the final project.

2013 finally saw two momentous decisions in realizing the Corridor: the selection of the Trans-Adriatic Pipeline (TAP) as the "Corridor's" European leg in late June of the same year, partly supported with European founds[35]; and the "Final Investment Decision" (FID)[36] on Shah Deniz II by the European Commission[37] in mid-December. The FID on the Azeri Shah Deniz was preceded by years of political and commercial maneuvering by national and private actors including the European Union, Russia and even United States, for an outcome that better suits their particular interests. In this context the whole pipeline can surely contribute to the process of diversification that Europe and its member states are searching for. It is also to consider anyway that coming supplies of TAP can hardly satisfy European markets in terms of volumes, neither as a strategic

[31] The British thermal unit (BTU or Btu) is a traditional unit of energy equal to about 1055 joules. It is the amount of energy needed to cool or heat one pound of water by one degree Fahrenheit. The BTU is most often used as a measure of power (as BTU/h) in the power, steam generation, heating, and air conditioning industries, and also as a measure of agricultural energy production (BTU/kg). - http://en.wikipedia.org/wiki/British_thermal_unit

[32] Demostenes Floros. Dipendenza energetica? Meglio dalla Russia che dagli Usa, 03/04/2014, Limes – Rivista Italiana di Geopolitica. - http://temi.repubblica.it/limes/dipendenza-energetica-meglio-dalla-russia-che-dagli-usa/60072.

[33] Europa.eu – EU Energy Security and Solidarity Action Plan: Second Strategic Energy Review - http://ec.europa.eu/energy/strategies/2008/doc/2008_11_ser2/strategic_energy_review_memo.pdf

[34] White Stream (also known as the Georgia-Ukraine-EU gas pipeline) was a proposed pipeline project to transport natural gas from the Caspian region to Romania and Ukraine with further supplies to Central Europe. - http://en.wikipedia.org/wiki/White_Stream

[35] TEN-E is the European program of financing the Southern Corridor - http://europa.eu/legislation_summaries/energy/internal_energy_market/l27066_en.htm - http://it.wikipedia.org/wiki/Reti_trans-europee

[36] Europa.eu on FID - http://europa.eu/rapid/press-release_IP-13-1271_en.htm

[37] Azeri gas filed - http://en.wikipedia.org/wiki/Shah_Deniz_gas_field

geographical distribution of it, nor as methods able to jeopardize Russia's position as the main supplier in Central and southeast Europe[38]. The perception is that EU intention is not to isolate Russia from its gas exportations but rather to diversify its suppliers in order to acquire a higher degree of security. For sure, the inability of the EU to act in a cooperative way with its member states, with diplomatic support and economic efforts, are still today a strategic mistake.

Another crucial question is now whether the EU will revisit the current Azerbaijani-driven "Corridor" concept. In fact, TANAP supplies, construction supposed to end in 2019, project transports Azeri natural gas through Turkey reaching the TAP, will be controlled by the Azeri's "National Energy Company" (Socar). At the same time EU cannot pretend all actors involved to respect European Union's regulation of the "Third Access[39]" since Turkey is not a member of the Energy Community[40]. Socar would thus fully control the gas transit via the pipeline across Turkey, including the possibility to take decisions which allow the transit of additional gas volumes from other sources, to decide to set autonomously transit tariffs, or rather to decrease supplies amount in particular situations. The result is that no short-term changes in the "Southern Corridor" plan are on the horizon. However, latest mid-term forecasts, which go beyond 2020, foresee that the project has the potential to become a major source of gas for Europe: up to 50/60 bcm from various sources, if the planned implementations will be realized[38].

This possibility surely could help EU to lessen its energy dependence from its most traditional suppliers. However, as many analysis made are underlining, the dependence European Union is spotting is hugely important for the former Soviet state[41]. In fact, Europe has now more possibilities to differentiate its natural gas supplies than Russia to be able to export its resources toward new markets: they only signed long-term agreements with China which at the moment does not dispose adequate infrastructures to concretely receive a consistent gas supply. What to pinpoint again is the Russian attempt to exert influence over Central Asia and the Caspian region in order to cut off Europe energy self-sufficiency efforts[41]. The question is indeed not only about the amount

[38] David Koranyi, The Southern Gas Corridor: Europe's Lifeline?, 30/04/2014 – IAI – Istituto Affari Internazionali - http://www.iai.it/pdf/DocIAI/iaiwp1407.pdf

[39] TPA rules dispose that: "pipeline operators cannot monopolize and fully book pipeline capacity and need to provide access to third parties as well." - David Koranyi, The Southern Gas Corridor: Europe's Lifeline?, 30/04/2014 – IAI – Istituto Affari Internazionali - http://www.iai.it/pdf/DocIAI/iaiwp1407.pdf

[40] Is a community established between the European Union (EU) and a number of third countries to extend the EU internal energy market to Southeast Europe and beyond. With their signatures, the Contracting Parties commit themselves to implement the relevant "EU acquis communautaire", to develop an adequate regulatory framework and to liberalize their energy markets in line with the acquis under the Treaty - http://en.wikipedia.org/wiki/Energy_Community

[41] Arno Behrens, Julian Wieczorkiewicz. Is Europe vulnerable to Russian gas cuts?, 12/03/2014, CEPS - http://www.ceps.eu/book/europe-vulnerable-russian-gas-cuts

of demand a certain market can have, but is about how much those new client-countries have already invested in infrastructures, transportations and plants. For instance, the agreement of energy supply signed by Russia and China, which includes a natural gas supply around 38 bcm, will not be completely developed until 2019[42]. Differently, Europe can gain from a wide amount of possible suppliers as seen above: the key strategies lie on which geopolitical decisions will be taken. How much a state invest in infrastructures, how much stable is the political system of a potential seller and which is the relationship that those suppliers already have with their clients, is what make the difference in the European Union's future choices in the natural gas context. At present, European Union's suppliers with which an implementation of imports can represent alternatives in the natural gas acquisition, are many. Qatar for instance, which is the first LNG[43] exporter in the world and from which the EU imports 7% of its gas needs. In this case the contracts which tie Qatar to the EU are simple spot contract[44], not onerous, neither indexed on oil prices nor established under long-term transactions such as those signed with Russia. The second possible actor in this context is Iran, which own the second largest natural gas fields in the world. Some problems reducing commercial relationships are currently taking place due to American and European sanctions issued because of its nuclear proliferation and refusal to cooperate with the international community.

Another alternative is represented by North Africa, particularly Algeria is among the ten countries with the largest natural gas fields and it still represents a solid partner for Europe. It has recently constructed a third natural gas pipeline toward Europe and has signed with it a cooperation agreement in 2013[42]. The problem in North Africa is security, as a witness to this, the recent Al-Qaeda attack to a natural gas field at In Amenas[45], with the risk of losing important investors for Algeria such as BP and Eni. Egypt, Libya and Iraq (eleventh in the world largest natural gas field owner ranking), could represent new opportunities. In this case, natural gas production, not decreased with the Isis advancing, is not supported likewise by investments in plants and transportations, then many of the times gas is burned, giving the name at the so called "gas flaring[46]". On the Libyan side, third LNG exporter state in the world[42], the 2011 civil war has forced the country to stop its natural gas exploitation and all the activities around it. Its natural gas production (of which Italy is the main buyer) is experiencing a critical period together with national

[42] Lorenzo Colantoni. Le opzioni dell'Europa contro la dipendenza energetica dalla Russia, 15/09/2014, Limes – Rivista Italiana di Geopolitica - http://temi.repubblica.it/limes/le-opzioni-delleuropa-contro-la-dipendenza-energetica-dalla-russia/60581

[43] Liquefied Natural Gas (edn)

[44] Imminent payments and delivery under a certain currency (edn)

[45] In Amenas hostage crisis - http://en.wikipedia.org/wiki/In_Amenas_hostage_crisis

[46] Gas flare - http://en.wikipedia.org/wiki/Gas_flare

political instability. Many alternatives, which specifically include North Africa, are now being considered beyond the Caspian region chance, since they represent some the current and largest European countries suppliers. All these hypothesis will be however discussed in the following chapters.

The situation for south-east Europe is therefore at a crossroad. “South Stream” seems to enclose Russian policy to maintain control over the southern European gas market, although it has changed its name and route; in addition, many European companies have invested on the project and are interested it to be developed. Gazprom, Eni, Edf and Wintershall[47] (BASF group) were the main actors involved in this transnational pipeline, although Eni’s investments have been paid back by Gazprom. Surely what needs to be considered is that several problematic issues, since the moment the project had been proposed in June 2007, took place. Firstly, some alternatives have been suggested by the international community (such as TAP, ITGI, TANAP and so on) contributing to the “South Stream” progress slowdown. Second, other European investors have moved to new convenient and easily developing options and have isolated the “South Stream” to remain only a Russian illusion. Third, some critical stops, like the decision to abandon Austria as the destination of the project, caused by the EU opposition to the Gazprom initiative to acquire more than 50% of Austrian trading platform, as well as problems on the EU legislative ground, have contributed to create new negative issues for the “South Stream” development.

Behind these two opposite projects (South Stream and the Southern Corridor[48]) a dense geopolitical scenario deserves to be investigated. For instance, the role of the United State represents a strange question inside the European pipeline network scenario. They contrasted the development of the “South Stream”, apparently because it would demonstrate the increasing geopolitical power within the EU territory by the Russian Federation, thing that can be considered reasonable but that remind us to distant Cold War logics. What is necessary to consider in any way is that the long-standing relations with Russia of some of the most important European Union members. In particular nations like France, Italy and Germany, has started with Russia an energy interdependence relation since the 1980s, signing with Moscow energy supply agreements and directly investing in upstream[49] activities in oil and gas extraction[50].

[47] Companies involved in the project are the Italian ENI, the Russian Gazprom, the French EDF and the German Wintershall (controlled by BASF) - http://it.wikipedia.org/wiki/South_Stream

[48] The pipelines articulation composed mainly by TANAP and TAP, starting from the Caspian region arriving in Italy (edn)

[49] Upstream is the set of activities in which a company invests in the “exploration and production sector” - http://en.wikipedia.org/wiki/Upstream_%28petroleum_industry%29

However, another hypothesis is that, while the slow development of a "Southern Corridor" is proceeding, the Russian Federation will exert political pressure over the states of the Caspian region in order to interfere with the possible EU future intention to enlarge cooperative dynamics with the region. To complicate matters, the juridical status of the Caspian nations is not well defined: this fragile political situation can facilitate the presence of corruption or a strong coercive diplomacy manifestation by Moscow.

1.4 Why the "Corridor's" gas is important for Europe?

At this stage, it is necessary to underline primary matters regarding issues by which the gas sector has become important for the European Community. Certainly, the Fukushima disaster's aftermath has helped natural gas to acquire much importance, according to its relevance as being the more sustainable for the environment among the fossil fuels, attribute underlined also on the EU "2020 climate and energy package" in 2007. Another important aspect to take into account is about transportation. In this context, as many analysts suggest[51], is helpful to understand differences between natural gas and oil in the context of fossil fuels as being the two main primary raw materials used for the production of various form of energy: this comparison can facilitate to comprehend why natural gas needs more attention in this context. From an early observation, it has to be noticed that natural gas is less fungible than oil, in particular if we consider the facility to transport it to the final client, factor that strongly weigh on the decision making for the management of natural gas. Natural gas needs to be transported with fixed infrastructures (pipelines) which also require high maintenance costs because of the elevated pressure of the gas system needed. For this reason natural gas is rarely transported by trucks in order not to permit large losses during the transfer, which is irrelevant in the case of oil. At the same time, if major gas pipelines is damaged, supply downstream[52] is stopped until they are repaired because alternative transportation by road are not an acceptable option due to high costs and low capacity of the mean of transport[53].

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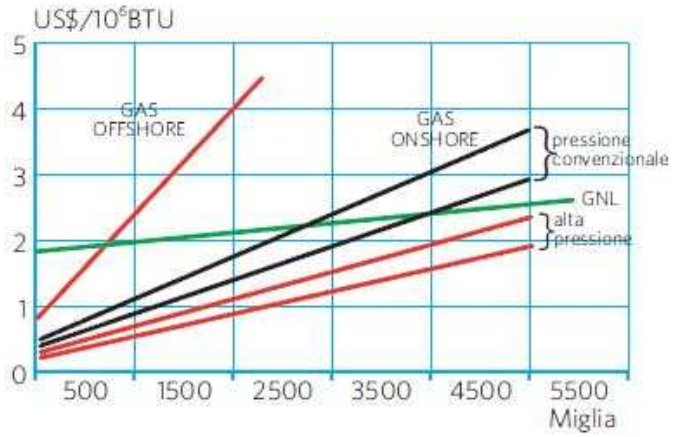
[50] M. Verda. Politica Estera e Sicurezza Energetica. L'esperienza europea, il gas naturale e il ruolo della Russia, 2012, Novi Ligure, Edizioni Epoké.
[51] Anouk Honoré. The Outlook for Natural Gas Demand in Europe. June 2014. Oxford Institutes for Energy Studies.
[52] The ultimate passage of the gas distribution, that is its final destination to the final client - http://www.treccani.it/enciclopedia/downstream_%28Dizionario-di-Economia-e-Finanza%29/
[53] Commission staff working document. In-depth study of European Energy - Securityhttp://ec.europa.eu/energy/doc/20140528_energy_security_study.pdf

Fig. 4 – Natural Gas Transportation Costs



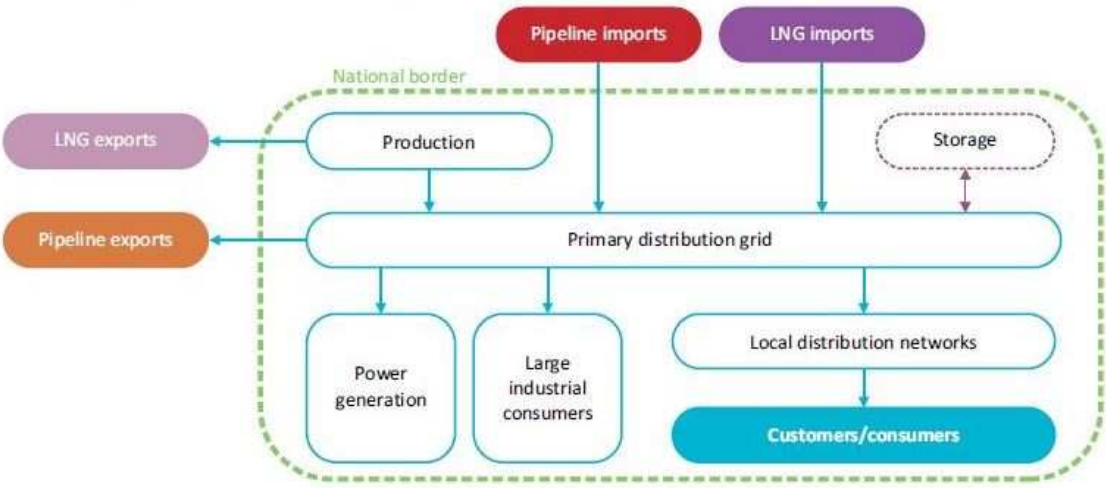
Source: ENI (y: dollars/BTU[54]; x: miles)

Besides, possible natural gas emergencies can occur and these events can possibly impact on the normal functioning of natural gas transportation. An important role is played by a sudden increase of natural gas demand, which have the same effects of a supply decreasing. Such growing demand are caused by temporary rigid temperature or cold seasons, even if also hot weather lead a rapid rise in gas fire demand to run air conditioners. Despite such seasonal fluctuations can be predicted and the presence of a solid markets should ensure enough supply, it cannot be taken as a rule, if we consider political and social events that can nullify those predictions. Differently, other emergencies can occur within the gas stocks: geological and technical barriers are the greatest impediment to develop sizable gas storage facilities for the producing countries. Besides, considering natural's gas low-energy density, which means that at standard temperature and pressure a volume of gas contain less energy than the same volume of oil, a more intensive extraction upstream is needed. Density of the stored gas is increased in order to contain more quantity of it, but the operating costs for storing gas, either under high pressure or in a liquefied form, are well beyond those for oil53. High pressure storage requires specialist materials such as thick steel pipelines and powerful compressors. Storing natural gas under high pressures will typically only be pursued if there is suitable geology for underground storage. The volume of gas left in a gas storage site emptied of useful working gas is referred to as the "cushion gas"53. The volume of cushion gas required to develop a large underground storage facility can account for up to half the cost of the investment. In this context,

[54] British thermal unit - http://it.wikipedia.org/wiki/British_thermal_unit

some possible consequences can be contemplated in the supply chain[55], like final clients costs increasing.

Fig. 5 – Natural Gas Supply Chain



Source: Limes – Rivista Italiana di Geopolitica

Other problematic issues have to be considered as influencing factors in order to manage adequate natural gas policies. They can occur at the end of the gas supply chain, for instance, when governments decide to modify their consumption depending on the price of gas in a market with consequences to the final consumer, which is often the citizen or a family unit of a state or region. In this case we talk about problems tied to a demand response. Another example is about Gas clients who can rapidly switch to an alternative fuel in order to manage a gas emergency situation. In most cases the choice of alternative fuel is technically limited to oil or oil products, as oil can be injected into gas turbines or sprayed into boilers. In this situation governments usually set specific obligations to maintain minimum stock levels of alternative fuels for use in a gas crisis[56].

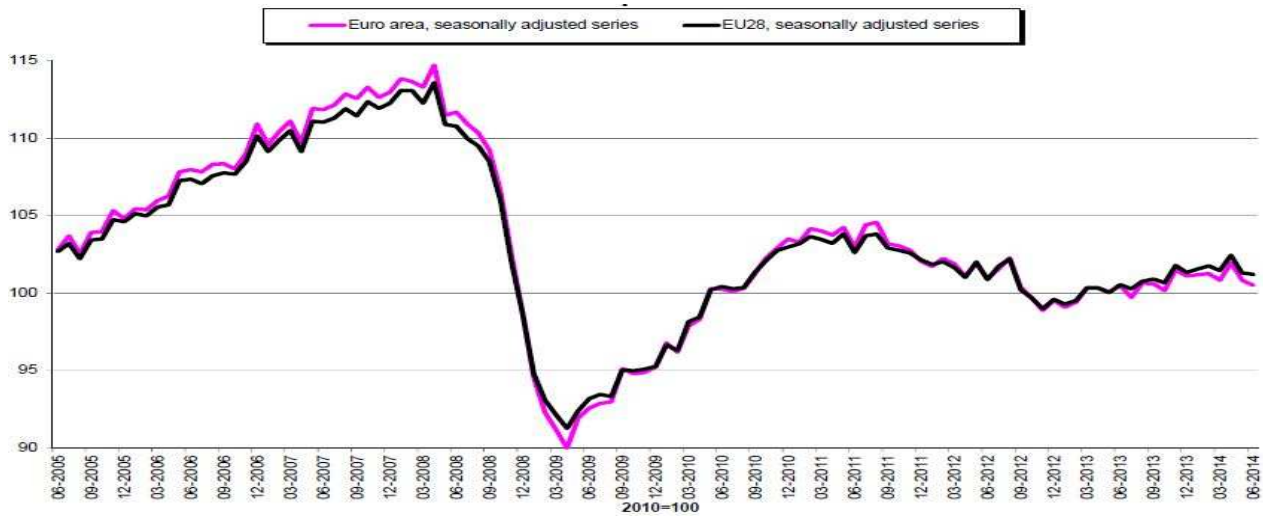
Natural gas is an energy source of primary importance just because of its complicated manageability compared to oil, even though, on the contrary, represents one of the most powerful energy sources. Especially for this reason, natural gas requires a long-term planning despite its position on the European energy mix is not more relevant than oil or coal. Natural gas for Europe

[55] The supply chain is the complex of activities, relations, manufacturing, know-how and various company's assets that accompany gas from upstream gas extraction to downstream distribution - http://en.wikipedia.org/wiki/Supply_chain
[56] International Energy Agency. Energy Supply Security, Emergency Responses of IEA countries, 2014, Paris, International Energy Agency.

occupies a leading position today mainly because of the condition around which the possibilities to acquire enough resources in order to avoid energy insecurity has been endangered. Natural gas consumption in Europe has been growing since the 1960s and expectations on the increasing of the demand have always been positive. The major gas shock happened with the financial and economic crisis in 2008-2009. Especially for the high costs behind the development of an efficient gas market, gas demand has today not recovered to its pre-crisis levels56. Before, in early 1990s, important transformations have happened thanks to a rapid growth of the power sector consumption and as a consequence, large investments in gas-fired power plants[57] and "Combined-Cycle Gas Turbines" (CCGTs)[58] have been made. For both economic and environmental reasons, natural gas has become the fuel of choice for power generation in most European markets. This process, regarding mainly north-west Europe and Italy, is due to a more intense allocation of natural gas in the power sector if we consider the rapid outsourcing phenomenon that other sectors (especially industry) have gone through in the period 2003-2008, accompanied to a stagnation of gas consumption in those non-power sectors56 in the same period. In addition, despite higher gas prices in that particular moment, probably caused by a scarce supply differentiation, south-east Europe markets around the Mediterranean Sea saw the fastest increasing demand, mainly thanks to their conversion into being the fastest growing economic markets in Europe. On the contrary, south-east Europe, Bulgaria and Romania for instance, saw their demand halve between 1990 and 2008. Finally, 2008 saw the European demand becoming flat due to the feeling of the effects of the economic recession. In sum, 2008 can be marked as the moment in which gas demand drastically started getting lower, including the power sector. Taking as example the industrial production, as an important sector of gas consumption, it can be a useful insight to understand how industrial gas demand has been affected by the recession (and in some cases by outsourcing):

[57] Gas-fired power plants - http://it.wikipedia.org/wiki/Centrale_a_gas
[58] CCGT represent the cheapest and least risky option for profit-driven private companies in a competitive context. - http://it.wikipedia.org/wiki/Centrale_termoelettrica_a_ciclo_combinato

Fig. 6 – EU industrial production evolution (2005 – 2014)



Source: Eurostat (it measures the evolution of the volume of production for industry excluding construction)

Most of the times, the decline of gas demand has been compensated to a large use of renewable and partly by coal, a less expensive and easily available source. In fact, although during 1990s and 2000s, gas demand and investments in gas field extraction cannot even be compared with coal (in favour of gas), in 2009 the combination of lower power demand and rising renewables made gas compete against coal for a shrinking share of total electricity generation as fossil fuels plants, an important data which show lower gas usage for power sector56. Furthermore, gas contracts with oil-linked supply have become less profitable than plants in countries with access to spot gas56, which led to contract renegotiations in the period 2011-2012, and that today is again under evaluation by the parts.

In the European markets, considering the kind of primary energy selected by each country in power generation, the gas sector has lost importance59, consequently it appears that the increase of renewable energy and the lower prices of coal (despite CO2 emission limitations) has affected the use of gas until at least 2012. Considering this and despite adverse data show that gas has loose its relevancy as less polluting and profitable fossil fuel, the reality point out that especially in the south-eastern countries of Europe, the energy basket is dominated by fossil fuels: oil, gas and coal are over ¾ of their energy requirements56. It in fact represent a crucial point: despite international community stimulations on renewable sources and the increasing of the usage of coal, where and

[59] Apart from France where it remain flat and low and Italy, on the contrary, where it is a central option in power production. (edn)

when possible, the gas role is however irreplaceable in some sectors, not only for electricity, for which household consumption cannot be changed without affording enormous costs, but also for heating. In addition, natural gas represents an important input for the industry, resource which guarantees the competitiveness of whole energy-intensive sectors with the necessity to exploit already existent national gas plants. Even for that reason, those investments and efforts already made before 2008, although the gas sector has decreased and represents a smaller amount of the energy mix compared with early 2000s, impose to the European Union to continue the development of a "gas securitization" process. It might be considered however some latest issues playing today a central position in the energy context in order to create an effective policy for the gas sector: the CO2 emission limitations, discussed in multiple EU agreements and energy packages, which can also make gas to gain ground against coal, accompanied by the necessity to discourage large suppliers hegemony, today possible thanks to the increasing heterogeneity of the sources. The question lie on the fact that the majority of European gas is imported, and that, at the same time, analysts forecasts foresee an high possibility on a change in trends by 2030 in terms of growth in the total primary energy[60] demand, favoring so the recourse of natural gas.

These two latest relevant factors, justify EU attitude toward a well-planned program about natural gas purchase and the preoccupation on dependence toward south-east Europe's major gas supplier, Russia. Effectively, downstream gas fields and also upstream supply chain of the European gas procurements are largely controlled by Gazprom, thanks to direct investments on pipeline that Russian's private oil and gas company have done. In this sense, although south-east European states have large imports also from North Africa, this play a central question given that in that case, upstream and distribution activities are also controlled by European energy companies.

Given its limited and decreasing reserves of natural gas, EU, as gas net importer[61], should improve securitization action in order to acquire enough natural gas resources to satisfy member states' needs. At the same time, in order to separate itself to the too close relationship tied with the Russian Federation, EU needs to diversify gas supplies. The high costs on pipeline maintenance as well as the search of an easier availability of the right capacity of gas, force EU to develop a larger supply market in which reliability, transparency and interconnection can mitigate dependence as a problematic issue. Finally, in case of supply crisis the possibility to acquire energy for EU should be more flexible than the current situation.

[60] Energy form found in nature - http://en.wikipedia.org/wiki/Primary_energy

[61] The total amount of EU Energy mix minus the exportations give the net importations (edn)

The pillars for future gas policies in order to acquire energy security for Europe[62] should be the following. Electricity production, heating for households and services (including district heating) and industry, that consume more than 90% of the natural gas in the EU. In 2010 European gas demand saw the last peak as a result of a colder winter than usual. Since that year, EU's natural gas demand has been stagnating, even though importations have already started to reflect a progressive decreasing from all the 2000s.

Analysts do not foresee any relevant growth until 2020, when natural gas demand is expected to be increased to 578 bcm. An increasing to 588 bcm[63] is expected to be reached in 2025, not a considerable growth considering that today EU consumption is around 530 bcm. This little growth is described as imperceptible by scholars[64], but for an accurate study it might be taken into account that global natural gas trends show an increase of demand of 1,6% per year by 2015[62], which however could be reflected in the European gas market and contributing to welcome new suppliers from farer countries. Besides, given that Europe and especially south-eastern Europe has been dependent on Russian gas for a long time, it does not mean that Russia will hesitate to use its exclusive position to put pressure on its European partners, and use it as a leverage to discourage EU to pursue energy policies that will not include Russia[65]. EU can also lean on LNG imports from countries such as Qatar, Algeria and Nigeria which allows it to reduce its dependence from Russia[66], even if, at the same time, Gazprom has publicly communicated its ambitious goal is to increase its gas exports to Europe to 250 bcm per year by 2020[67]. Anyway, all the projects discussed and, in part, approved by EU, seems to show a move to the intention of starting cooperative relations with and possible future supplies from, the Caspian region. As a witness to this, the primary position of Italy as the first commercial partner of Azerbaijan and the presence of ENI as investor in the Azeri energy field[68], represents the proof of the European states' active participation in the international energy ground.

[62] Ernst & Young. Global LNG: Will new demand and new supply mean new pricing? March 2013. Ey.com
[63] Billion Cubic Meters - http://en.wikipedia.org/wiki/Billion_cubic_metres_of_natural_gas
[64] Ariel Cohen. Caspian Gas, TANAP and TAP in Europe's Energy Security. 04/14. Istituto Affari Internazionali, Rome.
[65] As the "South Stream" question has underlined (edn)
[66] Process that has already brought EU to reduce gas imports from Russia of 75% in 1990 to over 30% in 2012. – Ernst & Young. Global LNG: Will new demand and new supply mean new pricing? March 2013. Ey.com
[67] Compared to around 160 bcm in 2013 (edn)
[68] Francesco Balzanetti. Il Nuovo ruolo dell'Azerbaigian nel contesto internazionale. May 2013. Cronache Internazionali – Cronacheinternazionali.com

THE EUROPEAN UNION
Policies, actions and trends

2.1 EU approach to the gas sector over the years

The energy question has always played a crucial role since the initial efforts of the European Community to integrate each member into a single common project, already from its earliest initiatives, the CECA[69] and the EURATOM[70]. In the following years, until today, the situation has extraordinarily evolved. However, some states are still tied to an attitude of national interests' preservation without fully allowing the EU, even in the energy ground, to cover its position of imperative and superior actor, with the role of monitoring the region for the assurance of the community's benefits. Considering this background, only starting from the 1980s, the EU has been enabled to try creating a unique European market, when a re-launch of cooperative and unite energy policies has become one of the Union's main goals. During the 1990s, the energy matter has been included in most of the EU legislation works[71], and today, the core of the European Union's aims have turned into the idea of building a unique European energy market, provided with efficient infrastructures and managed in a free economic competition. These European institutions' initiatives have brought member states to define a common strategy that goes beyond the sole idea to create an integrated energy market. However, efforts are still needed from every single member in order to cope challenges that have to be faced in a more continental view, being the single member's labor insufficient. The liberalization of the energy market in the European context represents an economic convincing option, although problematic issues concerning national interests can contribute to create tensions in the international relations arena. The development of energy policies is one of the main issues included in the states' industrial policy, a crucial sector for energy and in which each country's economy plays a central role. In this context, policy making and national interests often collide, for instance, the French government's attitude to safeguard the position of Edf[72] in the French energy field, as one of the main nuclear power in the country, contrasts the EU intention to reduce nuclear power in its territory. According to this example, it is

[69] Comunità Europea del Carbone e dell'Acciaio - http://it.wikipedia.org/wiki/Comunit%C3%A0_europea_del_carbone_e_dell%27acciaio
[70] Comunità Europea dell'Energia Atomica - http://it.wikipedia.org/wiki/Comunit%C3%A0_europea_dell%27energia_atomica
[71] Matteo Verda. Politica energetica dell'Unione Europea e le scelte dei Paesi membri, capitolo 5 in "La politica estera dell'energia. L'Italia, la sicurezza energetica e gli interessi nazionali", 2012, ISPI/ Fondazione Farefuturo.
[72] Électricité de France S.A - http://en.wikipedia.org/wiki/%C3%89lectricit%C3%A9_de_France

important to underline the different interpretations is given by the Community and single member states of the idea of cooperation.

Differently, from an international dimension (outside EU), the energy question assume other characters which must be taken into account: the example of large supply contracts can help to understand the situation EU members is going through. Concretely, they often imply investments choices in some strategic sectors and needs sometimes the EU state's politic alignment to be revised. All that goes beyond economic considerations because of the long-term obligations tied between international actors[73]. In this case in fact, different political and economic priorities of the supplier countries, make scarcely possible the respect of only European regulation of economic efficiency and free competition. As said in chapter one, France, Germany and Italy for instance, have signed with the Russian Federation military supply and industrial investments agreements, in addition to fossil fuels supply contracts, which implies a careful planning of the relationship among the parts. To complicate matters, in the process of energy market liberalization, which implies a concrete laws proliferation, European Community and single member states have chosen to discuss with national or, most of the times, private energy companies, also known as "national energy leading firms". These big vertical-integrated[74] companies, such as the Italian Eni[75], French Edf[72], E.On[76] and Rwe[77] in Germany, constitute still today a benchmark in the energy field and, at the same time, they put pressure over energy Community policies because of the huge slice of the market they occupy. Contrapositions between these two different forces, EU from one side, states and "national energy leading firms" on the other, has often brought to compromises that have not given the expected results, letting national interests prevail, thinking it might have been sufficient to keep a certain degree of energy self-sufficiency for both the Union and single states.

Despite this background, European Union's proliferative attitude, in terms of directives, regulations and decisions, has however paid off, at least in the legislative field. With the "Europe 2020"[78] strategy, the European Commission has provided to define five energy priority issues. Efficiency, which means the creation of an integrated pan-European energy market; security, make costumers more responsible on their consumes in order to achieve a maximum established level of security; innovation, extend European companies' technologic and innovative leadership to other markets;

[73] Like long-term contracts signed between European countries and extra-European countries. (edn)
[74] A company which due to internal strategic decisions, owns and organizes most of the supply chain of a product - http://en.wikipedia.org/wiki/Vertical_integration
[75] ENI is the biggest Italian energy company - http://it.wikipedia.org/wiki/Eni
[76] The German E.On is one of the biggest energy companies in the world - http://it.wikipedia.org/wiki/E.ON
77 Rwe is a German electric utilities company - http://en.wikipedia.org/wiki/RWE
[78] EU 2020, European Commission - http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/index_it.htm

international actions, with the purpose to strengthen external potential of European energy market. These strategies have been elaborated by the EU in a set of actions and collected into three European "energy packages", which also includes increasingly ambitious measures in order to liberalize and integrate national electric markets, but above all, as this study aim to highlight, implement national (and communitarian) natural gas markets. The "First Energy Package" has been developed during 1990s, in a moment in which the European Union was searching for more cooperative stance among member states. It includes 1996/92/CE and 1998/30/CE directives which concern dispositions on electricity and gas issues. The package has deepen the discourse in the gas field, displaying that it was necessary for the Community to favour interconnections and interoperability of the gas system, taking also into account compatible quality of gas within the European pipeline plot. It was the first time EU imposed the presence of non-discriminatory behavior between the transmission's users, admitting the refusal to other parties access only in case of lack of capacity or in case the access would neglect public-service obligations[79]. This latest crucial question was deepened and reaffirmed in 2003 with the "Second Energy Package". Concretely, this adjustment directive[80] underlines that member states should ensure a "third party access"[81] to gas transmission and distribution, based on non-discriminatory[82] and public tariffs. Precisely, the 2003/55/EC directive's aim is not only to achieve a complete competitive market, but rather to guarantee a "competitive, secure and environmentally sustainable market"[83], concept which posed the basis for the market-regulatory issues displayed later by the EU.

2009 is the year in which "Third Energy Package" has been elaborated and promulgated, at the same time it marked the moment in which a complete and articulated "energy package" has been created, especially in terms of defining communitarian market assets, projected toward their liberalization and integration. The directives 2009/79/CE and 2009/73/CE[84] in fact dispose more clearly defined duties for natural gas regulatory authorities[85], attention to costumer's rights, regional solidarity among EU and non-EU states as well as national emergency measures in case of severe disruption of the natural gas supply. These can be considered as the earlier efforts the EU made in

[79] Art. 7 and art. 17 of 98/30/EC directive - http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31998L0030:EN:HTML

[80] As the Second Energy Package is supposed to be (edn)

[81] Permit other parties (national or private companies) to exploit the plants in a free market competition (edn)

[82] Regulation 1775/2005 - http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:289:0001:0013:EN:PDF

[83] Directive 2003/55/EC - http://www.energy-community.org/pls/portal/docs/36278.PDF

[84] And CE regulations 713/2009, 714/2009 and 715/2009 - http://ec.europa.eu/energy/gas_electricity/legislation/legislation_en.htm

[85] These authorities role is to control and supervise pipeline and market activities. This disposal is underlined in the First and Second "Energy Package" (edn)

order to avoid a full ownership of the system by one company or owner as well as give attention to separate pipelines networks control: from that moment, transmission, distribution and storage have to be managed separately by different companies. But the most revolutionary measure adopted by the European Community in this legislative action is about the ownership of the national transportation infrastructures, fundamental elements in the context of the instauration of a free competitive market. In this context, although the EU initial purpose was to separate the system ownership among networks and market operators with the so called "unbundling"[86] clause, European member states' political pressure has brought the Commission to introduce two further options, in which the network remain in the vertical integrated companies' hands. The alternatives elaborated are about the management of the system and provide that, on a first case, the network is committed to an independent company that manages the whole chain (Independent system operator, ISO). In a second case, the network is committed to an independent transmission company (independent transmission operator, ITO) which is part of the vertical-integrated owner company but manage the system autonomously and with transparency. This final measure, as described previously in this chapter, can intended as an EU compromise taken with energy national companies in order to safeguard their position of former public monopoly, and representing the major force in their national energy field. What is remarkable is that the process has inevitably turned this action from a market management differentiation process to homogeneous results, with few firms controlling the whole pipeline network, favouring so the largest ones. Despite this, it is curious to underline that the initial proposed option of "separated ownership" as said, has been adopted by traditionally more opened states such as United Kingdom, Denmark and the Netherlands[87]. The rest of the European Union, where vertically integrated companies have historic foundations and their action is tied to the public administration, the "separation" process has not found positive developments. In this context, national parliaments have oriented their decisions toward the two models presented and especially the second, more conservative and cautious. However, those huge national companies have in some cases chosen to leave networks in order to avoid antitrust actions or to be pushed under the force of complex regulations. Some companies such as the German E.On[76] and Rwe[77], have sold part of their gas pipelines, while Spanish Endesa[88]

[86] Is a method often adopted by authorities in order to separate vertically integrated companies controlling the whole supply and distribution gas chain, since the possibility to create a monopoly is high - http://www.treccani.it/enciclopedia/unbundling_%28Dizionario_di_Economia_e_Finanza%29/

[87] Even bacouse they represent the gas richest countries and the market is more flexible. (edn)

[88] Is the biggest electricity company in Spain operating in the gas market with Enegàs - http://it.wikipedia.org/wiki/Endesa

has closed its entire pipelines network to avoid regulation adjustments or authority controls. In Italy, Enel[89] has destined its "Snam Rete Gas"[90] to be separated in 2012, for the same reason.

The "Third Energy Package", in force today, furthermore includes a "reciprocity" clause which practically blocks infrastructures acquisitions for those firms coming from countries in which the legislation does not dispose similar norms in terms of energy and natural gas' networks management[91]. Moreover, it has been left to national governments the possibility to stop possible danger FDIs[92] which can jeopardize the development of a free and regulated market. What to remark is that this complex of norms has posed limits to Gazprom penetration to the European markets, with consequents negative implications on EU and Russian Federation political relationships.

The "Third Energy Package" has also reinforced the presence of national authorities appointed to supervise over gas networks. Those independent institutions' competences are also amplified to the possibility for them to take binding decisions, such as fixing access tariffs, elaborate norms in terms of networks separation, costumers safeguard, monitoring network access and planning. Besides, the package provides the presence of the "Agency for the Cooperation of Energy Regulators"[93] (ACER), with the purpose of favouring a more homogeneous diffusion of energy norms elaborated by the Commission. ACER has also the task to define investment plans in the medium-long period and to manage national gas networks through the "European Network of Transmission System Operators", ENTSO[94] which, in the case of natural gas it refers to the "European Network of Transmission System Operators for Gas", ENTSO-G[95]. These initiatives represent European huge efforts to regulate and institute free market and investments in the natural gas ground. Among the actions in the background of the "Third Package", we can locate the "Economic Recovery Plan"[96] of 2010, in which European Union have individuated 43 projects deserving 2,3 billion euro, focused on the gas sector.

[89] Italian firm and one of the biggest European electricity company - http://it.wikipedia.org/wiki/Enel

[90] Owned to the Italian ENI group until 2012, when it has been separated and when it started to operate autonomously - http://it.wikipedia.org/wiki/Snam_Rete_Gas

[91] EurActive. 'Gazprom clause' issues Russia ultimatum for energy co-operation – euractive.com - http://www.euractiv.com/energy/gazprom-clause-issues-russia-ult-news-218748

[92] Foreign Direct Investments - http://en.wikipedia.org/wiki/Foreign_direct_investment

[93] ACER - http://en.wikipedia.org/wiki/Agency_for_the_Cooperation_of_Energy_Regulators

[94] ENTSO - http://en.wikipedia.org/wiki/Agency_for_the_Cooperation_of_Energy_Regulators

[95] ENTSO-G - http://en.wikipedia.org/wiki/European_Network_of_Transmission_System_Operators_for_Gas

[96] In November 2008, the European Commission presented the European Economic Recovery Plan, a plan of 200 billion euros (1.2% of GDP) to fight against the consequences of the economic crisis in the European Union, including the energy sector - http://ec.europa.eu/economy_finance/publications/publication13504_en.pdf

2.2 *The current situation*

However, the existing gap between European and national energy policies is particularly evident in the natural gas case. Since many years, a contraposition between the most important member states wish (France, Germany and Italy first to all) to impose their needs to guarantee their own gas supply security, have influenced the European legislator in defining those strategies of gas procurement toward more geopolitical issues rather than economic or necessity-driven communitarian measures. Natural gas in this context plays a central role due to its importance as main fossil fuel source in the European energy mix. Only in the thermoelectric energy generation ground in fact, natural gas covers over the 20% of the European electricity consumption and in some other cases it gets over 40%[97].

Simultaneously to the three "energy packages", since the 1992 Maastricht Treaty[98], an important Community's institution has been created in order to better deal with issues like creating a cohesive European market, economically and socially speaking. This project aims to promote investments on modern and efficient infrastructures in order to create interconnection and interoperable networks in the Union. In energy terms, the TEN[99] project is translated into the TEN-E[99] that is the Trans-European Energy Network. The TEN-E project found its basis in the 2006[100] decision of the European Parliament and Council, which repeals 1996[101] and 2003[102] decisions. This European project's goal is the interconnection, interoperability and development of trans-European networks for transporting electricity and gas. What established in the packages is now (since 2006) operational with an articulated project which has the crucial role of trying to ensure gas supply security and diversification, strengthening territorial cohesion in the European Union. The TEN-E sets itself the goal of promoting "projects of common interests" and "priority projects". The first are addressed to pinpoint the objectives and the priorities for the development of a project, such as potential economic viability, costs and benefits analysis, the degree of the supply security as well as the efforts to promote territory cohesion, issues of primary importance for the Commission. The

[97] Is the case of Italy, UK and the Netherlands - Matteo Verda. Politica energetica dell'Unione Europea e le scelte dei Paesi membri, capitolo 5 in "La politica estera dell'energia. L'Italia, la sicurezza energetica e gli interessi nazionali", 2012, ISPI/ Fondazione Farefuturo.

[98] The Maastricht Treaty posed the basis for a more cohesive European economic market and socially integrated community. It included energy question also in art. 154, 155, 156. – Europe.eu - http://europa.eu/legislation_summaries/institutional_affairs/treaties/treaties_maastricht_it.htm

[99] Trans-European Networks included also TEN-E (energy networks), TEN-T (transportation networks), Eten (telecommunication networks) - http://it.wikipedia.org/wiki/Reti_trans-europee

[100] 1364/2006/EC - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006D1364&from=EN

[101] 96/391/EC - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31996D0391&from=EN

[102] 1229/2003/EC - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003D1229&from=EN

second, has the purpose to select some projects that have the priority need of being developed: that significantly impact on the proper functioning of the energy market and on the security of the supply. These projects have the financial priority compared to other.

Meanwhile, in order to support the TEN-E, 2010 saw the creation of the "Directorate-General for Energy"[103], a branch of the European Commission which goals have been already reported several times in all the EU decisions, regulations and actions in the energy context: create a competitive internal energy market to lower prices, to develop renewable energy sources, to reduce energy dependence and to reduce energy consumption. Based in Brussels and directed by Dominique Ristori[104], this institution operates respecting legislative works that have been elaborated since 2009 and today in force. This set of directives and regulations represent the most updated complex of norms of the European Union in the energy field. What to underline are those dispositions that act as basis for the Directorate's action: procedures to improve the transparency of gas (and electricity) prices charged to industrial end-users[105]; the disposal of common rules for the internal market in natural gas[106]; the disposal of the conditions for access to the natural gas transmission networks[107]; the establishment of an "Agency for the Cooperation of Energy Regulators£[108]; regulation on wholesale energy market integrity and transparency[109]; concerning measures to safeguard security of gas supply[110] and finally, the establishment of the "European Regulators Group for Electricity and Gas"[111].

In this huge vastness of European norms created for the natural gas market and its regulation, the most important role is played by infrastructures, its management and the flexibility of natural gas transportation. Geographical location, the number and available capacity of pipelines, LNG terminals and underground storage are key factors in considering the flexibility with which the infrastructure allows to react to supply disruptions and periods of high demand. The high degree of

[103] Europe.eu - http://ec.europa.eu/energy/index_en.htm
[104] Dominique Ristori - http://en.wikipedia.org/wiki/Dominique_Ristori
[105] Directive 2008/92/EC - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0092&from=EN
[106] Directive 2009/73 /EC - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0073&from=EN
[107] Regulation (EC) No 715/2009 - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009R0715&from=EN; Commission Decision 2012/490/EU - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012D0490&from=EN; Commission Decision 2010/685/UE - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010D0685&from=EN
[108] Regulation (EC) No 713/2009 - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009R0713&from=EN
[109] Regulation (EU) No 1227/2011 - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32011R1227&from=EN
[110] Regulation (EU) No 994/2010 - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010R0994&from=EN
[111] Decision 2011/280/EU - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32011D0280&from=EN

gas reliability often impose to energy institutions to realize expensive infrastructures that ties in long term economic and political agreements importer and exporter countries. Consequently, to defend gas procurements represents a priority for the developments of energy security policies for the Community, which need to be accurately supported by knowledgeable agencies. Different geographical positions and long-term experiences have to be taken into account in order to develop adequate measures that can encounter opposite national situations. The United Kingdom for instance, is the biggest European natural gas consumer but at the same time is one the most liberalized markets, which makes UK one of the few states in harmony with the European legislation. On the contrary, Germany, Italy and France represent three natural gas markets in which the consumption is strictly connected with a high degree of dependence with foreign exporters. This makes difficult for them to fully respect EU norms in the gas field, in addition to their necessity to keep good relationships with those external producers. This unfortunately forces them to create a bilateral challenge in order not to defeat natural gas supply. Moreover, they (slowly) started a process of investments in other gas sectors (like LNG), without neglecting the latest idea of diversifying suppliers and search new options for its gas procurements. Once again "national energy leading firms" are playing an important role in this context, according to their relevant position in the international energy arena which poses them as being some of the national most operative companies in the international field. In this context, is not surprising that Italian, German and French governments reacted negatively to the latest energy initiatives of the European Commission.
Infrastructures, whether "conservative" states agree or not, is a crucial question because they represent an inevitable measure for the implementation of the needy European gas network. The European Commission estimated in 2011 that around 210 billion euro are needed for gas pipeline and power grids by 2020[112], 140 of which are destined to high pressure gas transmission pipelines, storage, LNG terminals[113] and reverse flow infrastructures[114]. Although the attention on the Nabucco project now has moved to other directions, we can deem that this amount, proposed at time in which the project was supposed to be developed, is not going to change in the short period. Considering that the European main challenge is represented by growing dependence on imports, without forgetting the uncertainties of the demand levels, an increasing economic effort in infrastructures is needed, although the Commission estimates that investments should not be

[112] David Buchan. Expanding the European dimension in energy policy: the Commission's latest initiatives. October 2011, The Oxford Institute for Energy Studies.
[113] An LNG terminal is a plant needed to convert liquifeid gas into natural gas in order to be distributed to final costumers or to sellers (edn)
[114] Plants constructed for the gas imports (edn)

directed to new gas pipeline (excluding those planned) but rather in storage, LNG terminals and reverse flow capacity[112]. But recent geopolitical developments, such as the Ukrainian crisis that suddenly show to Europe the Russian intention to keep its hegemonic and lumbering presence into the European natural gas market, makes the Commission aware that the Azeri gas is needed for the south-eastern Europe supply. In addition, a special attention needs to be given to the affordability and availability of these alternative supplies: the location, capacity and interconnectivity of infrastructures, are important factors determining whether these supplies will be able to reach markets and in what time frame. Europe has a badly distributed pipeline infrastructures, with entry points located predominantly at its northern and eastern boarders. As a witness to this, south-east countries which rely on Russian gas for all or most of their supplies, have long been characterized by a lack of interconnections with the rest of Europe. Most existing infrastructures in the region are built with the purpose of only delivering Russian gas to the region. Consequently, those interconnection points between individual European countries' gas networks only allowed for unidirectional[115] flow. Finally, the EU made its first financial contribution towards enabling construction of infrastructures in south-east Europe in the aftermath of the 2009 Ukrainian crisis. The decision came after those circumstances in which part of the European gas procurement, arriving from Russia and passing through the Ukrainian territory, has been interrupted because of the conflict. Even for this reason, in 2009 the EU set up the "European Energy Program for Recovery" (EEPR)[116], which includes the activity of all the EU energy agencies which operate under the European Commission control, investing 3.8 billion euro into various energy projects. It mainly concern projects including central Europe rather than southern but that anyway have completed many interconnection in that area[117]. This program has contributed to strengthen the European legislation in the gas field, including directives of gas supply[110] security and the regulation on guidelines for trans-European energy[118]. The EU has established a regular budget for co-financing the future infrastructures construction with 9,1 billion euro supposed to be spent in the 2014-2020 period[119]. Furthermore, the EU has created a new internal agency with the purpose of using part of this budget (50 billion euro is the total amount) to boost transport, energy and digital

[115] From east to west (edn)
[116] EEPR - http://europa.eu/legislation_summaries/energy/european_energy_policy/en0012_it.htm
[117] Hungary-Croatia; Romania-Hungary; Poland-Czech Republic;Bulgaria-Romania; and national plants in Austria, Slovakia, Latvia, Lithuania – The Oxford Institute for Energy Studies. Reducing European Dependence on Russian Gas. October 2014,Oxford Institue for Energy Studies
[118] Regulation (EU) 347/2013 amedning regulations (EC) 713/2009; (EC) 714/2009; (EC) 715/2009 seen in note 14. (edn)
[119] The Oxfrod Institute for Energy Studies. Reducing European Dependence on Russian Gas: distinguishing natrual gas security from geopolitics. October 2014, Oxford Institute for Energy Studies.

networks. The CEF's[120] (Connecting Europe Facility) goal is to support investment in the deployment of infrastructures required to enable the delivery of cross border services. Moreover, to be a useful mean for the European energy agencies operating in the EEPR[116] in order to develop "projects of common interest", included in the TEN-E[99] initiative. Unfortunately, only a project that contributes toward the creation of one of the four "priority projects" can be eligible, against of a set of PCI[121] criteria as established in Regulation (EU) 347/2013. The list of PCI project includes the "Southern Corridor" and all the pipelines which have been discussed as possible routes for delivering the Caspian gas to Europe[122]. Despite this, the ability to bring alternative supplies to south-east Europe remains constrained not by the physical congestion, that takes place when the level of demand for actual delivers exceed the technical capacity at some periods of the year, but instead by contractual congestion, where the level of firm capacity demand exceeds the technical capacity. Implementations of the "Third Energy Package" would allow a more efficient utilization of existing infrastructures by reducing contractual congestion: existing improved pipelines and new infrastructures and plants would be the solution the EU is searching for south-east Europe.

In this context, the only non-Russian pipeline gas supply which will definitely be available for Europe by 2018 is the Azeri gas (Shah Deniz 2[123]), arriving across Turkey and then passing thorough Greece and Albania to Italy across the Adriatic Sea. Referring to what reported in the 2011 European Commission's "Priority for 2020 and Beyond: a Blueprint for an integrated European Energy Network[124]", EU defines the Caspian Sea's "Shah Deniz" field as "the vastest gas field in the world". It represents then, the first reason for the development of an efficient European policy toward the "Southern Corridor". Potentially, the corridor could reach the range that includes the gas richest countries in the world, such as Russia, Iran, Iraq, Kazakhstan, Turkmenistan and Uzbekistan.

[120] CEF - http://www.confindustria.eu/item/337-Connecting_Europe_Facility_%28CEF%29_Meccanismo_per_collegare_l_Europa;jsessionid=A47434A1A8B43887280A05A3F13A5B8F

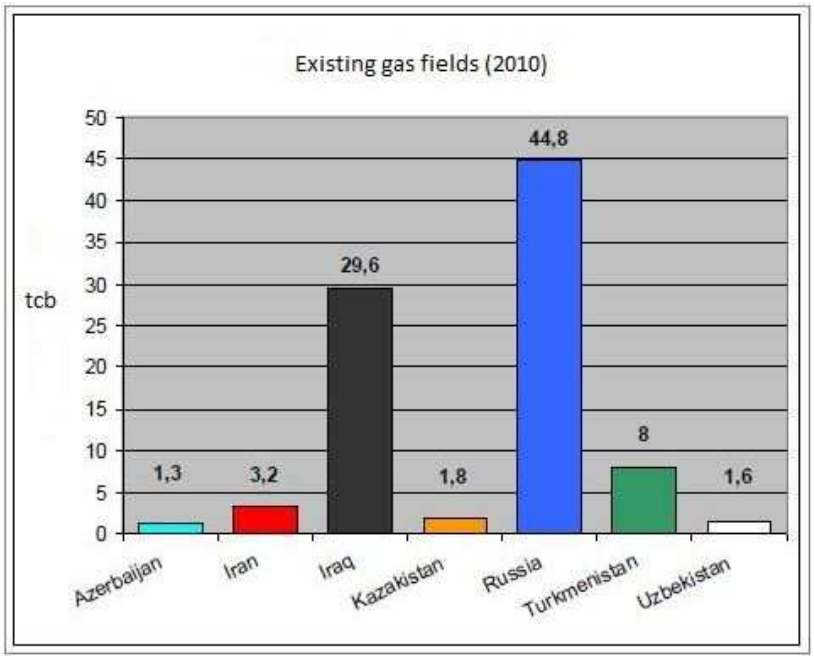
[121] Project of Common Interests (edn)

[122] Since, as seen in chapter one, the winner is the TAP project.

[123] Shah Deniz gas field - http://www.bp.com/en_az/caspian/operationsprojects/Shahdeniz/SDstage2.html

[124] European Commission. Priority for 2020 and Beyond: a Blueprint for an integrated European Energy Network, 2011 - http://ec.europa.eu/energy/publications/doc/2011_energy_infrastructure_en.pdf

Fig. 1 – Existing gas reserves in the Caspian region



Source: Istituto Affari Internazionali – IAI (y: trillion cubic meters; x: existing gas fields)

2.3 The "Southern Corridor" and the "Nabucco" fall from an EU perspective

Beyond the already launched TANAP project that will connect Azerbaijan and Turkey which constitutes the central segment of the "Southern Corridor", the focus of the discourse in the international relation arena has been lately moved to the decision on which of the proposed projects is the definitive pipeline to develop for the EU. After the 2013 decision of abandon the "Nabucco" project (and before the "Seep project[125]") in favour of the development of TAP, things seems to have become clearer. The TAP project in fact, initially launched by a joint venture including the Swiss Axpo[126], the German E.On[76] and the Norwegian Statoil[127], at the moment including also BP[145], Socar[128], Total[129] and Fluxys[130], has the purpose to connect Greece and the Puglia region in

[125] It is a pipeline supposed to be connected with the Nabucco in order to reach Romania, Bulgaria, Austria and Hungary. In 2012 it has been declined in favour of the Nabucco West (failed) or TAP - http://en.wikipedia.org/wiki/South_East_Europe_Pipeline
[126] Axpo Holding - http://en.wikipedia.org/wiki/Axpo_Holding
[127] Statoil ASA - http://en.wikipedia.org/wiki/Statoil
[128] Azeri oil and gas company - http://en.wikipedia.org/wiki/SOCAR
[129] French energy company - http://www.total.com/en/
[130] Belgian gas company - http://www.fluxys.com/

Italy costing 1,5 billion euro. Igi-Poseidon[131] and TAP are very similar, firstly for their capacity (8/10 bcm), secondly they both are flexible projects, economically speaking. Besides, the realization timetable is short, Azeri natural gas in both cases can be sent not later than 2018.

Fig. 2 – Projects for the "Southern Gas Corridor"

Source: Istituto Affari Internazionali – IAI

Certainly, over the years the "Southern Corridor" question has become the main test case for the EU energy policy. Various EU exponents, including the former European Commission's President José Manuel Barroso, have invested a large part of their political actions to promote the development of the initiative. The "Southern Corridor's" history begins at the end of the 1990s, when the European Commission have identified the Caspian region as one of the main area from which start the process of diversification of European energy supplies. The INOGATE[132] (Interstate Oil and Gas Transport to Europe), launched in 1997 and integrated by the "Baku Initiative[133]" in 2004, represent the first EU effort of starting relationships with the Caspian region's countries. This initiative's main goals concerned the attention on gas supply security and actions on increasing the number of possible gas suppliers for Europe (especially southern Europe in this case). Certainly, another important goal is the gas market integration between the Caspian and south-east Europe and the realization of new infrastructures in order to transport natural gas between these two regions. Initially, in 2003[134], the plan included the development of a dense pipeline network with the purpose to pass across Greece, Macedonia, Serbia, Bosnia, Croatia, Slovenia and arrive to Austria. A second project purpose was

[131] See more details about this project in the following chapters (edn)
[132] INOGATE - http://en.wikipedia.org/wiki/INOGATE
[133] The "Baku Initiative" is a EU program of instaurate relationship in terms o transportation and energy with the Caspian region's countries - http://en.wikipedia.org/wiki/Baku_Initiative
[134] Decision EC(2003) 1229 - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003D1229&from=EN

to construct a pipeline that was supposed to start in Turkey and arrives to Austria, passing through Hungary, Romania and Bulgaria. Anyway, both projects have the main intent of satisfying part of the European demand and to diversify gas supplies[135]. On December of the same year, European Commission has permitted to the "Nabucco consortium" a study on the affordability of the project: from that moment, Nabucco has become the project in which the EU has posed all its efforts for the development of the "Southern Corridor". Effectively, it was the only one considered to have the right capacity (31 bcm) and the potential to reach southern-eastern countries, still too much tied to the Russian supplies. The political and economic efforts were huge: in 2010 European Commission has assigned to the project a 200-million-euro fund in the background of the earlier creation the "European Economic Recovery Plan" (EERC); in September of the same year the "European Investment Bank" (EIB) have confirmed the commitment towards the "Nabucco" project and disposed a financing up to 4 billion euro. In 2006 EU has defined the "Natural Gas Route 3", the pipelines network which was thought to be necessary to link European countries and the Caspian Sea region[136]. There were not references to other possible options (ITGI or TAP), confirming the EU preference on the "Nabucco" project, underlined also in 2007 with the "An Energy Policy for Europe[137]" in which European Commission nominated Jozias Van Aartsen[138] as the special coordinator of the initiative.

This long decision-making process has been accompanied by an acute diplomatic activity: since the beginning, the European Commission has worked in order to ensure an enlargement of the "Nabucco" capacity as well as to guarantee the economic affordability and commercial advantages of the project[139]. Several agreements or "memorandums" have been signed during this set of relationships undertaken by the EU. In 2006 was the time of Kazakhstan, with the purpose of exporting Kazakh natural gas to Europe[140], while in 2008 was Turkmenistan's turn, with the purpose of sending 10 bcm of gas to the European markets[141], both ideas currently put aside. Moreover, with the intent of amplify European Union energy horizons, 2010 saw the approach to

[135] As seen, what nowadays remain of that project is the central presence of Turkey (edn)
[136] Decision EC(2006) 1364 - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006D1364&from=EN
[137] EU COM(2007) 1 final - http://ec.europa.eu/energy/energy_policy/doc/01_energy_policy_for_europe_en.pdf
[138] Jozias V. Aartsen - http://en.wikipedia.org/wiki/Jozias_van_Aartsen
[139] Nicolò Sartori. Politica europea dell'energia: il Corridoio Sud, 06/12, Osservatorio di Politica Internazionale/IAI, Rome.
[140] EU - "Memorandum of Understanding and Co-operation in the field of Energy between the European Union and Kazakhstan - http://ec.europa.eu/dgs/energy_transport/international/regional/caucasus_central_asia/memorandum/doc/mou_kazakshtan_en.pdf
[141] EU – "Memorandum of Understanding and Co-operation in the field of Energy between the European Union and Turkmenistan" - http://ec.europa.eu/energy/international/doc/mou_turkmenistan.pdf

Iraq[142] and the year after with Uzbekistan. Finally, in 2011 the Commission, given that the deadline for the tender of "Shah Deniz II" was arriving, has intensify its activity in assuring to "Nabucco" the Azeri gas. On January, President Barroso has signed with the Azeri President Ilham Aliyev the "Joint Declaration of the "Southern Gas Corridor"[143] which would have guaranteed a 10 bcm supply for Europe. But finally, although the huge efforts made by the EU, concerning agreements, memorandum and declarations, the construction of the Nabucco project has been put aside in 2013, favouring the TAP by the "Shah Deniz" investors. The project failure can be attributed to the earlier development of more firm relations by Azerbaijan with Turkey, which see itself as a possible gas hub for Europe and its neighbors, and which has already experienced good relations with Azerbaijan on the construction of ITG[144] project, today operating and completed in 2007. Besides, the 2011 agreements between Azerbaijan and Turkey, in which the two countries decided to launch a new project for the transportation of the Caspian gas, have added a relevant element in the already intricate question of the "Southern Corridor". The TANAP developments played in fact an important role in a period in which the negotiations on "Nabucco" were proceeding. Probability also for the fact that the Azeri "Socar" will control almost 80% of the TANAP pipeline (supposed to be concluded in 2019); a new pipeline, as "Nabucco" was, of uncertainty ownership, was not worth the risk for Azerbaijan. Finally TANAP took "Nabucco's" place as the main interconnector between the Caspian gas and Europe, passing to the now, after having undertaken close relationships with Baku, most politically and commercially relevant Turkey. It is important to remember that in this context, another important project as the "Igi-Poseidon" (ITGI), has been rejected. Despite the Italian and Greek governments have repeatedly underline their intention to develop the pipeline, the BP[145] has put aside the question sustaining that only the TAP project should have been taken into account in 2011. Effectively the British Petroleum is currently operating in the "Shah Deniz" gas field and represents one of the main partners for the TAP development (which includes its 20% participation), apparently it had all the interest to carry that specific project forward.

As seen for "Igi-Poseidon" (ITGI) fall, the TANAP and TAP victory has been reflected also in other regions. The Balkan and Austria for instance, as passing countries of the last part of the

[142] EU "memorandum of Understanding between the governemetn of Iraq and the European Union on Strategic Partnership in Energy" - http://ec.europa.eu/energy/international/bilateral_cooperation/doc/iraq/2010_01_18_iraq_mou_en.pdf

[143] EU "Joint Declaration of the Southern Gas Corridor" - http://ec.europa.eu/energy/infrastructure/strategy/doc/2011_01_13_joint_declaration_southern_corridor.pdf

[144] Interconnector Turkey–Greece–Italy which today only connect Turkey and Greece - http://en.wikipedia.org/wiki/Interconnector_Turkey%E2%80%93Greece%E2%80%93Italy

[145] British Petroleum which is present in the TAP project for the 20% and which have close relationship with the Azeri government for the exploitation of the Shah Deniz field. - http://en.wikipedia.org/wiki/BP

"Nabucco", have endured a loss with the TAP selection. At the moment, even though a new possibility have been later presented by the modified original "Nabucco" project, converted into the "Nabucco West"[146], the question is at the moment dropped off. Even the SEEP[125] project, supposed to cover almost the same route of the "Nabucco" as well as representing its main alternative, has been rejected by the "Shah Deniz" consortium.

In consideration of what described, it would be necessary to try individuating whether the causes of the "Nabucco" project fall are connected with European wrong policies or coming from external and independent causes. In the south-east European context, with TAP as the winner, it is now difficult anyway to establish if the EU has truly met its goals. Certainly, the decision to select TAP represents a clear win for Russia, as it allows Gazprom to maintain a monopoly of gas supplies to some eastern energy-dependent states with high gas consumption, such as Bulgaria and Austria[147]. The abandon of the South Stream project additionally enforce Russia presence in Turkey, considering its intent on developing a new gas pipeline across the Bosporus. Surely is a victory for the "Shah Deniz" biggest shareholders, which has finally reached the goal of developing a corridor that includes Azeri national interests[148] and energy company economic returns. Unfortunately, the EU's "Europe 2020 strategy[78]" that shown as strategic goal for the "Southern Corridor" the satisfaction of 10-20% of the European gas demand, (so that satisfy most of the southern European countries' demand), which approximately means to receive between 45 and 90 bcm per year by 2020[139], have been impeded by these latest decisions, as well as having displayed that latest geopolitical implications are reducing the most optimistic European expectations.

To complicate matters, it is important to underline that TAP's[149] limited capacity, is apparently only targeted at low-consumption markets such as Greece, Albania and southern Italy, even though the project, if implemented, could reach Montenegro, Bosnia and Croatia as well as sustain the entire Italian gas grid. Probably the decision over TAP selection is twofold: fur sure, one of the motivation for selecting the TAP was driven by the commercial differences between the two competing projects, including the cost of shipping Azeri gas and gas prices in the recipient markets, a less expensive choice. Secondly, the domestic Azeri political situation and the nature of its ruling elite suggest that decisions over energy policies cannot be taken without the approval of highest political

[146] The Nabucco West pipeline is a project proposed by Nabucco investors after the decision of the Shah Deniz consortium to develop the TANAP and TAP projects, then modifying the original Nabucco pipeline project. - http://en.wikipedia.org/wiki/Nabucco_pipeline

[147] Nona Mikhelidze. The Winner is TAP: The EU's Failed Policy in the South Caucasus, July 2013, Istituto Affari Internazionali IAI, Rome.

[148] With the TANAP and TAP construction 80% of the corridor is in Azeri hands (edn)

[149] 10 bcm per year - http://it.wikipedia.org/wiki/Gasdotto_Trans-Adriatico

authorities in the country[147]. EU should have given more attention to the importance of a crucial conflict for Azerbaijan, which can influence over political decisions. The unresolved Nagorno-Karabakh[150] conflict and the continuing occupation of the seven adjacent regions by Armenia, represent an important issue to take into account on the negotiation process with Azerbaijan[151].
In this sense, given the EU primary position in the cooperation process with Azerbaijan, the "Nabucco" failure can be connected to geopolitical issues and failed policies, rather than economic profitability of the project, by now anyway favouring only the Azeri side[152]. EU policy toward Azerbaijan should have been more protective in order to increase Azeri attention on EU interests. A more active participation on the conflict resolution process, for instance condemning Armenian occupation or changing the format of the OSCE Minsk Group[153] too inclined towards pro-Armenian positions (such as France), could have facilitate negotiation over the development of the "Nabucco" pipeline. Having reached a dead end in the conflict resolution process, for Baku the only decision the government could have taken on the "Southern Corridor" development is commercial or technical-driven, rather than political. None direct political efforts have been made by European Commission in order to facilitate a peaceful conclusion of the war. Despite this problematic issue, further analyzed in chapter three, for the Azeri government (with Shah Deniz shareholders and US in the background) the TAP has been seen as a useful method to balance foreign policy in order to attract EU investors, enabling Baku to penetrate the European market and, at the same, possibly being a measure to avoid Russia troublesome presence in the Caspian region[147].

2.4 The role of the "Third Energy Package" in the current south-east Europe energy ground

In this context the European "Third Energy Package" plays an important role. One of the bases of the initiative is to permit the differentiation of the plant ownership and the distribution of the gas in the same system, also known as the "unbundling" clause. The TAP, differently, has obtained various legislation exemptions in May 2013, date in which the European Commission has decided to grant to the pipeline the possibility not to respect the "unbundling principle[86]", to postpone any

[150] Independent Repubblic proclaimed by Armenian speaking population in seven regions before included into the Azeri territory. - http://it.wikipedia.org/wiki/Nagorno_Karabakh
[151] See chapter 3
[152] The TAP project had strong commercial rationale and, bearing in mind costs and gas prices, a mostly-controlled Azeri pipeline, to the detriment of Nabucco, is what Azerbaijan can see as a victory (edn)
[153] It is a coflict-resolution group of the OSCE created in order to solve the Nagorno-Karabakh war. - http://en.wikipedia.org/wiki/OSCE_Minsk_Group

problems linked to the "third access[82]" clause, and to some restrictions imposing investors to regulate tariffs. The European energy needs has functioned as a magnet for the Azeri energy company's "Socar". It has promptly bought its participation in the TAP project and, at the same time, has acquired the Greek gas distribution operator "Desfa". Doing that, "Socar" placed itself both as a TAP consortium shareholder as well as main operator of the Hellenic gas network, who supplies gas for Italy. In this sense, the European Commission has not given particular directives concerning the possible reconsideration of these exemptions, clearly showing its position of hesitant actor, which deal with energy questions admitting double standards[154] decisions. Concretely indeed, the EU has undertaken a simplification route toward the TAP project in term of regulations and laws, favoring a pipeline that will inject into south European countries only 10 bcm more than the current supply, much less than those countries' needs and only in part capable to satisfy European "differentiation rush[155]". The TAP example shows today how much the Commission have rejected for such a long time other infrastructures (for instance Transmed[156]; Greenstream[157] or Galsi[158]), considered outside the European conception of a regional and a common pipeline network. The same position that did not neglect the Commission to impede Bulgaria the approval of a law that would guarantee a better treatment for a "South Stream" offshore segment[159]. As a witness to this, a Commission directive[160], and in particular the eleventh article, clearly leave to the European Commission the last word in the pipeline framework management and shows the European attitude toward a protectionist practice in order to permit itself to decide the most fitting supplier in the gas context for Europe.

In this view, the "Third Party Access" exemption granted by the EU to TAP appeared more attractive than the scheme agreed for "Nabucco" or other projects. TAP, in addition, has offered to the "Shah Deniz"[161] consortium the pipeline's entire initial export capacity (10 bcm) for a period of 25 years, while in the second phase the new volumes (a further 10 bcm) would be allocated through an "Open Season" process. This possibility encouraged the "Shah Deniz" shareholders to select

[154] In comparison with South Stream, the TAP and the Southern Corridor in its entirety seem to have more facilitation in terms of law and regulations. The international community perception is that EU is trying to leave Russia out of the energy games (edn)

[155] Edn.

[156] Trans Mediterranean Pipeline with the purpose to link Algeria and Italy - http://it.wikipedia.org/wiki/Transmed

[157] It is pipeline that would connect Libya and Italy - http://it.wikipedia.org/wiki/Greenstream

[158] Algeria-Sardinia pipeline - http://it.wikipedia.org/wiki/Galsi

[159] Bulgaria blocked works on South Stream after EU alert of not conformity with the EU legislation; see also chapter one - http://www.lastampa.it/2014/06/08/economia/guerra-dei-gasdotti-la-bulgaria-blocca-i-lavori-del-south-stream-kRpSU3q6wFadnvT5NjA01L/pagina.html

[160] Directive 2009/73/CE - http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:211:0094:0136:it:PDF

[161] Shah Deniz II is a project that propose to exploit Shah Deniz gas field in the Caspian Sea in Azerbaijan – BP - http://www.bp.com/en_az/caspian/operationsprojects/Shahdeniz/SDstage2.html

TAP due to a larger capacity of gas transportation in just a little time, which was similar to the "Nabucco" capacity but not at the same conditions of full usage of the pipeline for the Azeri consortium investors.

The “Third Energy Package”, as the latest European official regulation in the energy field, was supposed to provide the tools to complete the liberalization of the European energy market, even though today could sometimes appear to be an EU method for distributing arbitrarily its interests. The core measure of the “Package” was to weaken big vertically-integrated energy companies, by requiring the separation of the generation and distribution activities from the management of transmission network, things that differently has been not applied in the TAP context for instance. What the European Union initially intended to avoid, accentuating more the importance of politics compared to the need of energy acquisition, is now fully adopted by itself in trying to exclude Gazprom and Russia from any kind of participation in the European gas (and energy) market. In this sense, the abandon of European routes by the “South Stream” can be considered as a victory for the EU.

However, in the context of the European Union policies and strategies making, where the current objective for the EU is to create an energy market at the European level, is important to underline the “regional” approach the Union has always intended to follow, a first breakthrough in an uncertain EU policy making. This choice is adopted because many European actors prefer working at a regional level with their neighbors, with which they tend to share their concerns, rather than at a centralized EU level, where it is often difficult to define and follow common interests in the energy field[162]. A regional scale so, is the EU method to direct various initiatives concerning focused regulations of the transmission system and regulations among operators and market players, dividing the EU into regional groups. This attitude, one of the most positive EU actions, has been taken in order to provide those lacking bottom-up dynamics that would complete the top-down approach undertaken by Brussels, tracing a policy framework useful to complete EU intent to construct a unique and cooperative energy market. From these regional trends might emerge not a fully integrated European market but several “energy macro-regions[162]” which can give an outlook of each regional situation in the energy (gas in this case) field. The final process of this attitude would be to collect those different experiences and bring them together in order to understand the degree of autonomy of each region in the gas supplies acquisition. Part of the rationale for these “macro-regions” is the fact that the EU needs a concrete action plan in a geographical scale,

[162] Angelique Palle. Regional Dimension to Europe’s energy integration, October 2013, The Oxford Institute for Energy Studies.

appropriate to its energy policy. European Union is composed by its member states and act with them in the policy-making ground. This means that the principle of "subsidiarity[163]", defined in article five of the "Treaty on European Union"[164], needs to be always applied, even in the energy field. According to the Treaty[164], "subsidiarity" means that decisions have to be taken at the lowest appropriate scale or level of government. The question now lie on the fact that if this view of "an optimal scale for EU"[162] is now applicable to an "optimum energy area" like it is for the "Euro-currency area" in the monetary sector. For instance, problems observed with the Germany's independent energy policy regarding nuclear and renewables, has recently generated electricity price decoupling with France, the Netherland and Belgium, leaving Poland and the Czech Republic to re-establish barriers for electricity flows at their borders[162]. The conclusions we can draw is about the effectively functioning of a regional approach at the service of European cooperation, if this approach is undermined by national energy conservative policies.

A second question is about how the regulation for an "optimum energy area" would be defined. In this context the EU has established that the critical size for a gas market within its borders at about 20 bcm per year[165], but interconnections and compatible market rules are still partly undefined. The most difficult point to settle here concerns both the difference by states' energy mix composition, individuate supply sources which compose a single area, as well as infrastructures implementation development in the EU states' territory. What we might argue in this case is that rushing an immediate EU-wide integration may prove counter-productive effects. Differently, to encourage regional habits of cooperation, is sometimes a more efficient method in order to achieve the objectives for a common energy policy. In fact, for the last ten years, the EU has been divided into a variety of regional grouping by the different actors in the energy sector[166]. On the gas side, the EU market is to be divided into a certain number of entry-exist zones, according to the "Gas Target Model[167]" endorsed in 2012, even though these areas are still not geographically well-defined. However, bottom-up initiatives also appeared on the political side, led by industry and government on the example of a "pentalateral group" launched in 2007 by France, Belgium, the Netherlands, Germany, Luxemburg, or the "Iberian Electricity and Gas Markets" brought together Spain and

[163] Europe.eu - http://europa.eu/legislation_summaries/glossary/subsidiarity_en.htm
[164] Treaty on the European Union - Europe.eu - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2010:083:FULL&from=EN
[165] EU's total consumptio aproximatively was 466 bcm per year in 2012 - CEER Vision for a European Gas target Model Conclusions Paper, December 2011.
[166] The NordPool for the Nordic power market for instance - Angelique Palle. Regional Dimension to Europe's energy integration, October 2013, The Oxford Institute for Energy Studies.
[167] ACER (Agency for the Cooperation of Energy Regulators) "Gas Target Model" - http://www.acer.europa.eu/Gas/Gas-Target-Model/Pages/default.aspx

Portugal in 2004 and 2008[162]. Both cases of regional initiatives have recently been taken in hand by the ACER (Agency for Cooperation of Energy Regulators), which is driving them towards less regional and more EU-wide oriented action[162]. According to this, the Commission reverted to the use of a regional approach to implement the 2013 "Infrastructure Regulation"[168]. Regional cooperation, in which lead actors in the energy market coordinate together price formation mechanisms, harmonize functioning and optimize cross-borders capacity allocation, is what Europe can do in order to better understand the situation in some area, characterized by already existent cultural affinity and territorial proximity. "NordPool"[169], the Norwegian and Swedish power exchange established in 1995 (today including also other EU countries) and the in-progress development of "Epex Spot"[170], including a power market involving Austria, France, Germany and Switzerland, can be a good example for other regions, such as the one including Italy, Turkey, part of the Balkan, in order to develop a similar relationship in the gas sector as well as having a better overview on how to manage the Caspian gas. The development of market coupling[171], being understood that a communitarian and coordinated EU framework exists in the background, brings forward the issue of the appropriate scale at which initiatives should be taken. In this sense, taking as benchmark the work of the "Council of European Energy Regulators"[172] (CEER) and the "Gas Target Model[167]", contributes to create a future single and liberalized European market as a combination of entry-exit zones together with the existence of virtual hubs[173]. Proposed entry-exist zone would be functioning as a wholesale market, structured so that any gas entering the zone could be virtually delivered at any exit point in the same zone. This would mean that many member states will have to create their own gas market with those of their neighbors. The result would be not a unique EU gas market as an EU-wide one, but rather a combination of markets interacting with each other and shaping a unique European connected network.

After the "Third Energy Package" promulgation, the creation of ACER and the ENTSO-G, has brought with them a new approach in which the objective was no longer for each region to focus on its own regional integration and issues through bottom-up dynamics, but rather on the development

[168] Disposed in the Regulation (EU) No 347/201 - http://ec.europa.eu/energy/infrastructure/pci/doc/com_2013_6766_en.pdf

[169] NordPool provides electricity for most of the EU northern countries - http://www.nordpoolspot.com/TAS/

[170] Epex Spot is an electricity exchange group - http://www.epexspot.com/en/

[171] ACER is trying to leveling market prices for the same region's actors,. The objective is to reach a the same price for whole EU based on energy stock exchange rapid price circulation – hacer.europe.eu - http://www.acer.europa.eu/Electricity/Regional_initiatives/Cross_Regional_Roadmaps/Pages/1.-Market-Coupling.aspx

[172] Council of European Energy Regulators (CEER) - http://www.ceer.eu/portal/page/portal/EER_HOME

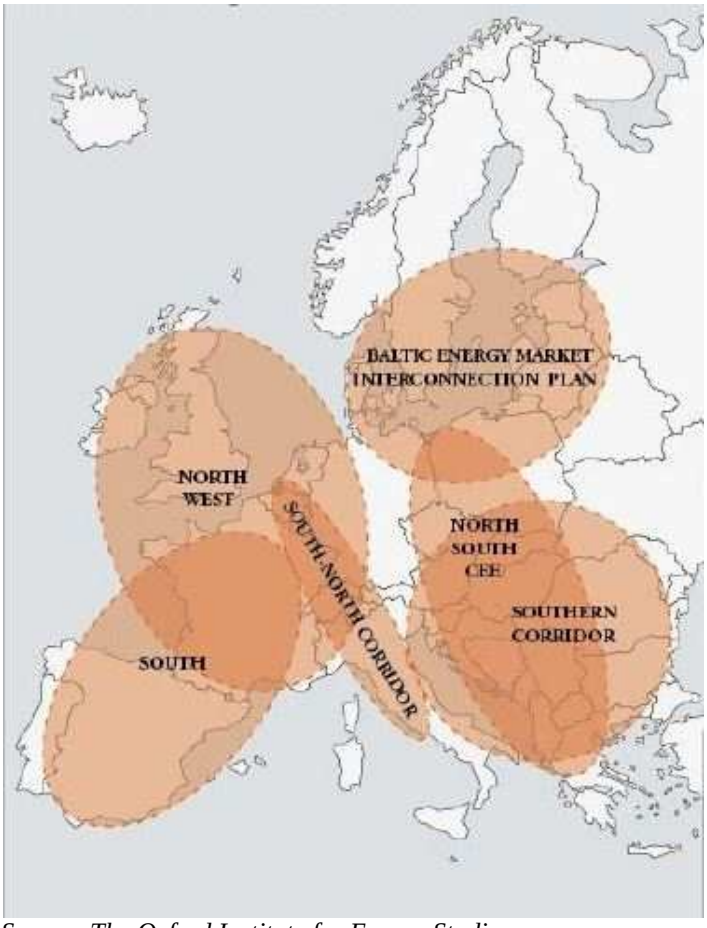
[173] An interconnection in which buyer and seller/supplier and demand converge. In the Turkish natural gas market, it could become a strategic encounter between Caucasian gas supplier (Azerbaijan) and South European clients. (edn)

of regional initiatives to ensure their further central coordination for the EU. An ACER 2011 review suggests that:

> A more project-oriented and pan-European approach, with notably the development of cross-regional roadmaps, as a way to guarantee that Regional Initiatives, will deliver towards the IEM (International Energy Market)[174].

This switch of emphasis from a proper regional division of the gas market into a more coordinated system by the central power, can be seen as the awareness of having developed too regional initiatives and not sufficiently European-oriented in the past. In this context the European Union change of view is quite clear and represents a breath of fresh air in the complicated EU energy ground.

Fig. 3 – ENTSO-G Gas Regional Investment Plans



Source: The Oxford Institute for Energy Studies

[174] ACER Regional Initiatives Status Review Report 2011. Getting to 2014: the role of Regional Initiatives.

The EU requires European gas TSOs[175] to promote regional cooperation through "Gas Regional Investment Plans" (GRIPs)[176], published biennially and based on an analysis of transmission system interconnections and operation, as well as the development of infrastructures[162]. Launched in 2006 with the support of the European Commission, the "Regional Initiatives'[177]" purpose is to create three gas regions as an interim step to complete the single energy market. This process, together with the "Third Energy Package" and the construction of the "Internal Energy Market[178]", could be the latest European Commission weapon in order to fostering an effective market integration on the basis of a regional and bottom-up approach, one of the most feasible methods to follow in today's European energy market uncertainty.

[175] Transmission System Operator - http://en.wikipedia.org/wiki/Transmission_system_operator
[176] ACER on Regional Investment Plans - http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER%20Opinion%2009-2013.pdf
[177] ACER – Agency for the Cooperation of Energy Regulators – Regional Initiatives - http://acernet.acer.europa.eu/portal/page/portal/ACER_HOME/Activities/Regional_Initiatives
[178] European Council. Conclusions on Energy, Febbrary 2011 - http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/trans/119253.pdf

FROM AN ECONOMIC AND GEOPOLITICAL PERSPECTIVE
A regional approach

3.1 The European energy security from a global perspective

Possible evolutions in the global energy scenario can imply upsetting changes on the balance of international actor's relationships. The current energy field situation seems to be perceived by the international community as product of a *status quo* that has been kept untouched at least since the last decade. However, various regional geopolitical dynamics, transformations and contracts limitations, or possible prices correlated decisions (which are still taking place today), may undermine the present international energy arena stability. The latest months has seen a succession of events that, taken singularly, can be considered independent to each other, but from a more enlarged view, they may draw a framework in which an opposition between two or more blocks seems to occur once again.

On July 2013 EU and USA have started negotiations in order to define a "Free Trade Agreement", the TTIP[179], with the final purpose to attenuate tariff barriers and to make uniform norms between these two markets, including the energy sector. On March 2014, China has publicly announced that it has started exploiting its shale gas resources destined to be commercialized soon, with possible future competition dynamics with the USA[180]. Besides, on May of the same year, China finally started cooperating with the Russian Federation, signing a thirty-year agreement for the gas supply. About 38 bcm of natural gas per year will be sent to the Asian giant from 2018, for a total amount of 400 billion dollar value[181]. According to huge efforts in term of investments by the Chinese power, the Kremlin has permitted China to pay in yuan rather in dollar, contributing to underline the attempt both powers are making to bypass American currency, in a phase in which Orient-Occident relationship is getting difficult[182]. On the other side, the US government has planned to develop an expansionistic commercial policy, including the possibility to export part of its increasing domestic oil reserves abroad, almost 40 years after the state decision to avoid it[183]. In addition, its self-

[179] Transatlantic Trade and Investment Partnership – Europe.eu - http://ec.europa.eu/trade/policy/in-focus/ttip/index_it.htm
[180] U.S. shale gas will be discussed in chapter 4 (edn)
[181] Matteo Verda. Europa e approvigionamento di gas: alcuni possibili scenari per il prossimo decennio, luglio 2014, Prometeia – rapporto di previsione.
[182] EU-US sactions to Russia are an example (edn)
[183] Council of Foreign Relations – The case of allowing US cude oil exports - http://www.cfr.org/oil/case-allowing-us-crude-oil-exports/p31005

sufficient gas procurement, not only permit to the USA to provide for its internal consumes, but also enable it to export natural gas abroad, as a consequence of the "shale gas revolution". At the moment, only few numbers for few companies are able to do it but, for sure, a signal that the world energy scenario is changing has been launched. Moving to a more global perspective, all the factors necessary to create a new intercontinental (energy) confrontation is taking shape. From one side, the raising axis Russia-China intends to contrast the economic dominance of the United States; from the other, the efforts to create an US-EU block, in which the Union is trying to make room after more than a decade of economic uncertainty, is clear. From an economic standpoint, the occidental side is the biggest bilateral trade flux on the international ground. The EU and the USA together make more than 40% of world exportation, 65% of the world R&D[184] is made in these two territories and 70% of the FDI[185] in the world are developed by these two powers. A big unique occidental market is what can place Europe and US as dominant powers in the international ground. It is interesting to analyze what is for the future of the energy market and how much those dynamics can affect southern Europe's regions aim to construct a gas channel which could support their energy supply security.

In this background, USA and Russia's role is fundamental due to their efforts in trying assuring influence over the Caspian Sea regions, which represents the European most valuable possibility on acquiring part of the needed gas supplies for its south-east area. From the American side, must be pointed out its latest maneuvers in establishing political relationships with Azerbaijan, especially focused on the energy sector. The transportation of energy resources to western markets is at the core of US activity. It includes investments for the development of Caspian hydrocarbons extraction in offshore Azeri oilfields, which soon can be turned into gas field exploitation, taking advantage from the Europe need to reach the Azeri gas[186]. To tell the truth, things had become more articulated when the Azeri government has begun to interest on exporting its gas and oil resources. In this sense, Azerbaijan had demonstrated to be a challenge also to Russia's energy strategy in the 1990s, when it was a crucial player in planning the twin Baku–Tbilisi–Ceyhan (BTC)[187] and Baku-Tbilisi-Erzurum (BTE)[188] oil and gas pipelines, which provided outlets for Azerbaijan gas to

[184] Research and Development (edn)
[185] Foreign Direct Investments (edn)
[186] Natural Gas Europea. Caspian Sea Littoral States' Perspectives on the Southern Gas Corrdior, Eu Cooperation and Chinese Dominance, September 2014, naturalgaseurope.com
[187] BTC oil pipeline - http://en.wikipedia.org/wiki/Baku%E2%80%93Tbilisi%E2%80%93Ceyhan_pipeline
[188] BTE gas pipeline aka the South Caucasus pipeline - http://en.wikipedia.org/wiki/South_Caucasus_Pipeline

Turkey[189]. The discovery of new gas deposits in the country raised concerns in Moscow that gas from Azerbaijan could compete with Russian gas, and especially that Azerbaijan together with Turkmenistan could have played a central role in providing gas for the "Nabucco" pipeline (at the time still in progress), which would deliver gas directly to Europe rather than through Russia[190]. In particular, Moscow was notably concerned over Iran's implicit support for Turkmenistan's participation, which would imply that Iran could have sent gas to European markets via Turkmenistan and Azerbaijan. Both former Russian President Medvedev and current President Putin have visited Azerbaijan in 2008 and 2010, promising to the Azeri government to buy all the Azeri gas in charge of selling weaponry to Baku, even though neither of them have decided to take a stand on the conflict with Armenia, crucial question for Azerbaijan. For Baku this uncertainty implied that under the right conditions, Moscow would not intervene in case of renewed war between Azerbaijan and Armenia[191]. The conflict represents an awkward issue for the Azeri government, which has underlined its importance when the EU decided to intervene using its typical political action[192]. The intention of participating in the international energy arena has been clearly demonstrated with its pipeline projects proliferation together with Europe and Turkey, the latter a huge Azeri gas receiver. Besides, the continuous flirting between NATO[193] and EU with Azerbaijan keep worrying Russia still today, a stronger NATO presence in the Caspian region might well revive plans to construct a Trans-Caspian pipeline[194] and enlist Turkmenistan's participation in this project. Indeed, Turkmenistan has entertained this dream for a long time but has been unable to accomplish it, in part due to strong Russian objections. This cooperative attitude with occidental forces, if it will yield its benefits, can incite Ashkhabad's hopes to deliver gas to Europe. In a moment in which the "Southern Corridor's" capacity should be implemented, stimulating so the development of the "Shah Deniz phase II", Turkmenistan's participation would be further bad news for Russia, but Iran's potential involvement, due to its enormous gas reserves, would be an additional failure to add on the latest oil prices and domestic currency crisis Russia has gone through. Moscow's concerns are enhanced by the possibilities opened by the relaxation of EU

[189] And partly for Europe in the future. The Baku-Tbilisi-Erzurum can help to amplify Interconnector-Turkey-Greece (edn)
[190] A well-described analysis is made by Dmitry Shlapentokh in a "Central Asia-Caucasus" article - Dmitry Shlapentokh. Central Asia-Caucasus. Dugin, Azerbaijan, and Russian Energy Strategy, article in "Central Asia-Caucasus", June 2014 - http://www.cacianalyst.org/publications/analytical-articles/item/12999-dugin-azerbaijan-and-russian-energy-strategy.html
[191] The Nagorno-Karaback conflict – see also chapter two - http://en.wikipedia.org/wiki/Nagorno-Karabakh_War
[192] Agreemnts, summit, foreign policy, diplomacy etc. (edn)
[193] NATO has been cooperating with Azerbaijan for a long time – nato.int - http://www.nato.int/cps/en/natohq/topics_49111.htm
[194] Trans-Caspian gas pipeline - http://en.wikipedia.org/wiki/Trans-Caspian_Gas_Pipeline

and USA sanctions against Iran, in addition to Moscow apparent inability to reach agreements with Teheran on a variety of issues related to the Caspian Sea[190]. Besides, Teheran was clearly displeased by the fact that it was not even mentioned as a potential partner in the emerging "Eurasian Union", largely promoted by the Russian Federation[195]. In light of these developments, Moscow appears to have decided to move decisively toward a "détente" period with Azerbaijan and other connected actors in the Caspian region. Surely, Russian latest defeats from many sides, from the collapse of oil prices to the ruble fall in price, has forced to a change of view the former soviet government over international relations, including the energy field. Energy-exporting countries like Russia are, from one side, eager to make large profits from energy activities but, from the other, their economic policy linked with upstream and wholesale market dynamics could pose them in difficult situations like today[196]. To complicate matters, 180 billion dollars loss from latest revenues from the sale of oil as well as European sanctions due to the Ukrainian question (from 40 to 60 billion dollars), has forced the Russian Federation to a concrete review of its foreign (energy) policy; the first step has been represented by its decision not to continue the development of the South Stream pipeline, even though the European legislative inflexibility did not help the project. As a consequence, experts report that Russian natural gas trade to Europe, its major client, has dropped of 13% at the beginning of 2015[197]. In addition, although a lower EU demand, global producing capacity of natural gas has increased lately, boosting competition for Russian pipelines flow. Russia in fact lean on more than two-thirds of its exports revenues from oil and gas, this will probably obligate it to revisit its contracts with the European consumers, firstly by discounting prices and, in a second moment, by changing agreements of oil-indexed contracts.

More focusing on the occidental situation, the question of an EU-Azeri cooperation in terms of gas supplies lie on a crucial issue, both for EU and Azerbaijan: the development of the "Southern Corridor". The Nagorno-Karabakh conflict represents an obstacle in the middle of the development of a clear energy policy towards the Caspian. The war continues to undermine Azeri capacity to defend what it considers to be its territory and represent a signal of weakness to the international community. The future of Azeri's gas supplies to EU member states are therefore today strictly connected to the conflict, which has long been the important theme of discussion between Baku and Brussels. Since the 1990s the energy resources ground have become the main political argument in

[195] Eurasian Economic Union - http://en.wikipedia.org/wiki/Eurasian_Economic_Union

[196] Antonella Scott. Petrolio, Mosca perde 180 miliardi, on "Il Sole 24 ore", January 15th 2015 - http://www.ilsole24ore.com/art/notizie/2015-01-15/petrolio-mosca-perde-180-miliardi-063844.shtml?uuid=ABBH4IeC

[197] Isis Almeida. Add Natural Gas Prices to Putin's Long List of Problems, January 8th 2014, article in Bloomberg.com - http://www.bloomberg.com/news/2015-01-08/add-natural-gas-prices-to-putin-s-long-list-of-problems.html

the Azerbaijani foreign policy, but also necessary for the state's health. In order to avoid military implication and to develop a peaceful national political solution, President Alyev has always undertaken negotiation for the future of the "Shah Deniz II" in connection with the Nagorno-Karabakh peace process. Almost 20 years of mediation between OSCE Minsk Group[198] on the Nagorno-Karabakh region have not solved the question threatening also Azerbaijan cooperative activity with its three main partners (Russia, USA and EU). Moscow reticence and overlooking attitude toward the question, looked as if it has enabled Azerbaijan to continue the process of diversifying its energy offer, developing a proper energy foreign policy destined to the Occident and including the possibility to increase state's economy. Azeri government currently need to find any possible peaceful solution with the Nagorno-Karabakh region and it seemed that only US or the EU could answer the Azeri ask for help.

Despite the US support on the "Nabucco" project, according to its long standing strategy to reduce Russian influence over the Caucasus region[199], the European interest over the TAP[200] (and so the entire "Southern Corridor") has placed it as being the most secure option on the development of a concrete political and energy agenda for the Caspian region. "Nabucco" had before not offered enough economic margins, especially for Azerbaijan. Both Europe and Azerbaijan have convergent interests in linking "Shah Deniz II" negotiations with the Nagorno-Karabakh question, in this context, the EU has lately claimed that it is going to reach an agreements based on the Madrid Principles[201] legislation.

In this view, certainly one of the main areas of cooperation between Azerbaijan and the EU is the dialogue on energy. New opportunities have been created for a more intensive collaboration in a number of areas in the energy sector, after the adoption of the EU "Eastern Partnership Program"[202] by Azerbaijan in May 2009. A sign of the positive development of such relations was the visit of, at that time, President of the European Commission José Manuel Barroso to Azerbaijan in January

[198] It is a political group created by OSCE in order to solve the conflict - http://en.wikipedia.org/wiki/OSCE_Minsk_Group

[199] The support on the Baku-Tbilisi-Ceyhan oil pipeline is a prove. - http://en.wikipedia.org/wiki/Baku%E2%80%93Tbilisi%E2%80%93Ceyhan_pipeline

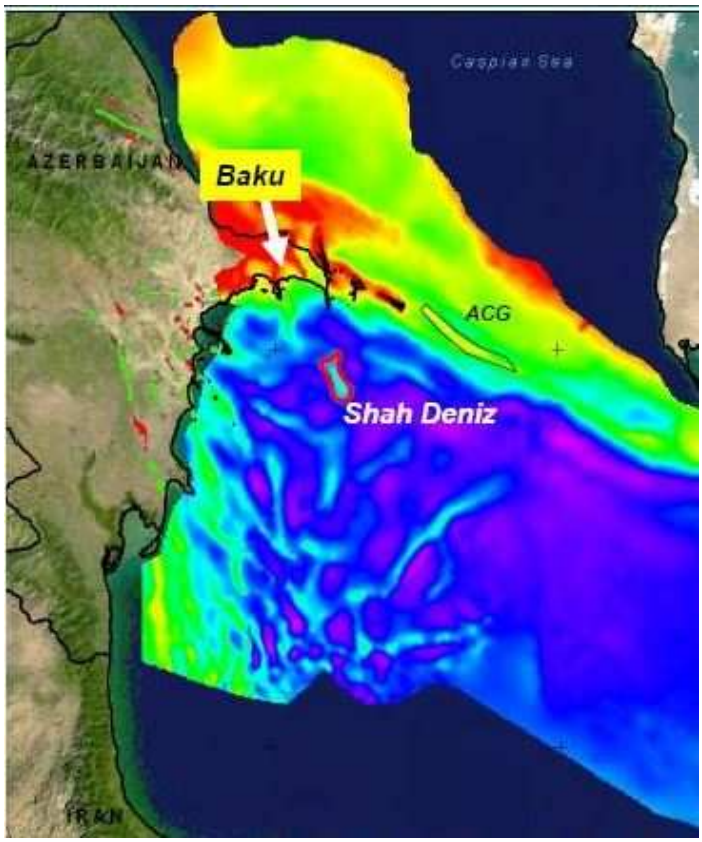
[200] Forced by the Shah Deniz Consortium's decision to select the TAP project. (edn)

[201] They refer to one of the proposed peace settlements of Nagorno-Karabakh conflict. - http://en.wikipedia.org/wiki/Madrid_Principles

202 It is an initiative of the EU on establishing close relations with some former Soviet states - http://en.wikipedia.org/wiki/Eastern_Partnership

2001, when the "Joint Declaration on the Southern Corridor"[203] has been signed, confirming that energy is a priority area for both parties.

Fig. 1 – The Azeri's "Shah Deniz Gas Field"



Source: Reuters

3.2 The Caspian region and Turkey

The "Shah Deniz" gas field is a central issue, shaping energy security in the Caspian region and also for south-east Europe future gas supplies. Azerbaijan's plan is to increase the volume of gas production up to 28,8 bcm per year, in a moment in which "Socar"[204] simultaneously has proven that its gas reserves have increased from 23,82 bcm in 2012 to 61,15 in 2014. Contributing factor is the "Socar" acquisition of the Greek "Desfa"[205], doing so the Azeri state-controlled energy company

[203] Europe.eu - http://ec.europa.eu/energy/infrastructure/strategy/doc/2011_01_13_joint_declaration_southern_corridor.pdf
[204] It is the Azeri national oil and gas company - http://new.socar.az/socar/en/home/
[205] Greek gas distribution company absorbed by SOCAR in 2014 - http://www.desfa.gr/default.asp?la=2

now manages most of the Greek gas market, already receiving from Azerbaijan natural gas through the Turkish-Greek ITG[206] pipeline. Moreover, it has simultaneously launched the "Guneshli oil and gas field"[207], which daily provides for 16 tcm[208] of gas, also planning to drill another 20 new wells in the same area soon. The great entity on the European gas market of “Socar” is going to weigh on possible further supplies for south-east Europe. Not to forget anyway, is the recent EU investigation which can include a possible re-examination of the acquisition process of “Desfa”, due to the possible establishment of a monopolistic environment into the Greek gas sector, forbidden by the “Third Party Access” clause of the European Union regulation[209]. The question remains thorny anyway, considering the “Southern Corridor” exclusion to the “unbundling” and “Third Party Access” clauses. In this view in fact, the Azeri “Socar” would be treated with two different approaches by the EU. Furthermore, in the Caspian area context, another important actor, not often cited for the south-east Europe gas supply but as much important because representing another gas-rich country and a possible future EU supplier, is part of the scene. Turkmenistan in fact, has recently started new cooperative action with Azerbaijan and projected to open its trade to other continents. It exports most of its gas to China, over 20 bcm a year, over half of China’s gas imports, becoming something of a resource colony for China and disposing of the world’s fourth-largest natural gas reserves. The totalitarian political situation does not help the cooperation towards democratic nations and even domestic gas consumption is suffering shortage for the high amount of exportations which are increasing President Gurbanguly Berdymukhamedov funds[210]. However, there is a project in which EU posed its hopes: it could increase the Union’s energy security and contributes to add a new international partner to the European list. An important initiative that could guarantee further gas supplies for the European ground as well as connecting Caspian countries together and try forming more stable cooperative relations with EU: the construction of the “Trans-Caspian gas pipeline”. The EU has begun in earnest to try facilitating diplomacy between Azerbaijan and Turkmenistan on the project, which started in 2011, but that later was dropped aside as the two countries failed repeatedly to resolve their differences, together with Brussels incapacity to offer substantial investments in infrastructures without concretely participating in upstream

[206] Interconnector Turkey-Greece(-Italy) - http://en.wikipedia.org/wiki/Interconnector_Turkey%E2%80%93Greece%E2%80%93Italy
[207] Azeri–Chirag–Guneshli oil and gas field - http://en.wikipedia.org/wiki/Azeri%E2%80%93Chirag%E2%80%93Guneshli
[208] Thiusand cubic meters (edn)
[209] Natural Gas Europe. Privatization of Desfa Faces Possible Challange, Novemeber 2014, naturalgaseurope.com
[210] Natural Gas Europe. Gas-Exportes Turkmenistan Suffering Gas Shortages – Report, October 2014, naturalgaseurope.com

activities[211]. In June 2014 Europe took the decision to re-open talks with Turkmenistan, even though it was not enthusiastically showing its interests to develop the TCP[212], in the meanwhile shelved in favour of smaller projects[213]. EU now hopes that the "Southern Corridor" development in other region, such as Turkey, Azerbaijan, Greece, Italy and Albania, will contribute to accelerate the discussion on the TCP as well.

In July 2014 UK's Energy Minister Fallon told journalist in Baku that the UK is supporting the TCP and that the war with Ukraine makes more relevant the issue of reducing Europe's dependency on Russian gas[214]. Possibilities to develop the project could increase if other Central Asian states like Kazakhstan and Uzbekistan might support the possibility to be linked, adding so other supplies to the TCP, if developed and if Russia will not interfere[214]. One of the most probable scenario that EU could be facing is that Russia use open warfare technique in the South Caucasus (like in Ukraine) under the guise of peacekeeping, destabilizing the area and possibly derailing huge gas pipeline project, including TCP, but also Europe's future lifeline TANAP[215]. What is quite sure is that the TCP may not be officially planned in the near future: a feasibility study[216] has not been done yet, condemning the project to remain only a diplomatic game for the moment. This is the reason why analysts caution that the EU's vision on the TCP is more about optics than capacity, also demonstrated by the lack of any form of contracting with the Caspian countries, although diplomat's optimism. The reality shows that more than a decade of Western negotiations based on the premise of Ashgabat to develop a diversified foreign policy, has only ended on moving Turkmenistan own dependence from Russia to deal nearly exclusively with China, leaving EU aside. Meanwhile, Russia, Turkmenistan's former largest consumer, has reduced its purchase to 10 bcm a year from the country, amount that now is destined to China, permitting it to become its largest buyer in the energy field. While the pieces of the puzzle seem to be coming together for other states involved in the "Southern Gas Corridor", Turkmenistan seems to remain only a potential partner.

[211] EU (like private and public institutions operating in the international market) needs to recover investments costs and make profit in energy field upstream plants in which it has invested. It that case, EU would have only invested in infrastructures without becoming a project shareholder. (edn)
[212] Trans-Caspian pipeline (edn)
[213] Information reported by Tengrinnewz.kz and Turan.az
[214] Natural Gas Europe. Is The Trans-Caspian Pipeline Feasable Again?, November 2014 – naturalgaseurope.com - http://www.naturalgaseurope.com/trans-caspian-pipeline-feasibility
[215] Brenda Shaffer, article in "The New York Times", September 17 2014 - http://www.nytimes.com/2014/09/10/opinion/russias-next-land-grab.html?_r=0
[216] It is a study which analyze the project in order to help the decision-making process - http://en.wikipedia.org/wiki/Feasibility_study

This is not the case of Turkey, which has close commercial relationship with Ashgabat for many years and represent Turkmen main trading partner after China. A possibility is that Turkmenistan will move slowly to be involved in the TANAP project as gas supplier, after the signature of a "framework" agreement with the private Turkish company "Atagas", which disposed to buy natural gas from "Turkmengas"[217].[218] The question now lies on through which country this gas supply should pass. In this sense, Azerbaijan is still in a dispute with Turkmenistan over the demarcation of the Caspian Sea Bed, while Russia has objected to the possible construction of any regional pipelines without Gazprom on the region. A valid alternative is to pass though Iran or through Uzbekistan and then to Kazakhstan, finally arriving to the Caspian Sea then to Baku. As it can be seen, some Caspian disputes are still remaining and undermining the possibility to include other actors in the "Southern Corridor" context, provided that the current shareholder companies will agree to implement the whole network capacity. From an economic standpoint, the construction of a Trans-Caspian pipeline is as controversial as in the diplomatic and political ground. It is not defined if Turkmenistan is able to ensure gas supplies to a competitive price due to large costs in infrastructures required. However, a study[219] made, highlight the possibility to distribute those costs to transit countries such as Azerbaijan, Georgia, Kazakhstan or even Iran which make the project economically bearable, even in the scenario in which Turkey will become the only final buyer.

From the Turkish side indeed, over the past few years in countries such as Greece, Bulgaria and the same Turkey, a discussion has been enacted regarding the viability of the establishment of natural gas virtual hub that will enable flexibility for the local markets, along with considerable price reductions, especially in times of great demand. Certainly the most prepared country to chase that objective is Turkey. Ankara is moving along aiming to establish a hub in Istanbul, betting on the introduction of the TANAP[220] by 2018 and increasing national gas volumes imports from Iran and Russia, according to the recent agreement which include upgrading the Blue Stream pipeline[221] and the turn to Turkish routes of the former "South Stream" pipeline. Besides, Turkey is creating an international importation network from countries such as Algeria, Nigeria and Qatar of LNG[222] and is eying to have also a steady flow of Kurdish natural gas supply. Turkey has while created the

[217] Turkmen national gas company - http://en.wikipedia.org/wiki/T%C3%BCrkmengaz
[218] Natural Gas Europe. Is the Trans-Caspian pipeline feasible again?, November 2014 – naturalgaseurope.com - http://www.naturalgaseurope.com/trans-caspian-pipeline-feasibility
[219] The Oil and Gas Journal. Analysis Suggests Economic Viability of Trans-Caspian Sea Gas Line
[220] Trans-Anatolian pipeline (edn)
[221] The Blue Stream pipeline bring Russian gas to Turkey across the Black Sea - http://en.wikipedia.org/wiki/Blue_Stream
[222] Liquefied Natural Gas (edn)

"EPIAS Energy Exchange"[223], which operates in the electricity market, even if, at the same time, could look like a strategic move in order to also entering the gas trade with its partners, Greece and Bulgaria[224]. The importance of Turkey as a new EU partner became recently relevant in the moment in which the "Shah Deniz Consortium" announced the selection of the Trans-Adriatic Pipeline (TAP) as the transport route for the Azeri gas to European markets on June 2013, just after the European discouragement for the "Nabucco" project failure. Together with the Trans-Anatolian Pipeline (TANAP), which will carry "Shah Deniz phase II's"[225] production across Turkey to the Greece boarders, TAP completes the link between European natural gas markets and the rich Caspian reserves. In this context, the real importance of TAP lies in its strategic impact on these regions. Ankara is eager to fill additional pipeline projects in the south-east Europe area with the view to transforming the country from a transit bridge into a concrete regional energy hub[226]. This will imply that Turkey can import gas from different directions and then, through the help of domestic (and European) energy companies' work, destine surplus volumes to be re-exported to European markets. This vision can not only increase Turkey geopolitical relevance and foster energy business, but also can enhance the flexibility of Turkish and European energy markets and create more competitive pricing schemes, without ignoring the possibility to develop Ankara's candidature to become a future EU member. Technically, every pipeline project included in the EU effort to bypass Russia gas supplies for the coming years in the south-east Europe regions, has to consider the Turkish route in order to be economically competitive, as the country offers the shortest route to the Caspian and Middle Eastern regions[227]. It is curious that despite its closeness to the world's richest hydrocarbon reserves, Turkey has not developed its fossil fuel production but has differently strengthen its internal energy market, surely helped by its strategic geographic position. Simultaneously, Turkey's natural gas demand has grown three-fold during the last decade of 2013, overtaking oil in the national energy mix and becoming the most important fuel in terms of volumes consumed[228]. In this context, Turkey's almost exclusively relies on natural gas imports, given that only 2% is made by internal production. 58% of its importations come from Russia

[223] EPIAS - hg.org - http://www.hg.org/article.asp?id=31170

[224] Studies estimates that this operation will bring to Turkey 10 bcm per year of gas, contributing for domestic electricity power plants – Natural Gas Europe. Efforts to establish a gas trading hub in Southeast Europe, November 2014 – naturalgaseurope.com - http://www.naturalgaseurope.com/gas-trade-hub-southeast-europe

[225] It is the enlargement of the already existent Shah Deniz gas field in the Caspian Sea – Bp.com - http://www.bp.com/en_az/caspian/operationsprojects/Shahdeniz/SDstage2.html

[226] A market "hub" is represented by a place in which offer and demand is encountering (edn)

[227] Faith Özgür Yeni. Thinking Beyond TAP: Turkey's Role in the Southern Energy Corridor, November 2013, Istituto Affari Internazionali, IAI, Roma.

[228] BP, Bp Statistical Review of World Energy 2013.

supplies which make the former soviet state a relevant actor in the relations with Turkey. This places Ankara in a position in which it cannot be rejected the possibility to let a Russian's gas pipeline project to pass through Turkish territorial waters in the Black Sea, although it competes with the European "Southern Corridor"[229]. Aware of its strategic crucial geographical position, Turkey has put energy in a central position in its policy and economic planning. Ankara has well considered new possible revenues coming for supporting the development of different projects[230].

In such complex energy geopolitics, Central Asia, called also by scholars as the "New Great Game"[231] arena, is the ground where a special interdependent relationship between Turkey and Azerbaijan has evolved[232]. In this context in fact can be included Turkey's search for supply security and especially its attitude towards becoming a gas "hub". From the other side, we can individuate Azerbaijan's aim to consolidate its economic (and political) independence through the integration of a trans-Atlantic[233] structures support. Azerbaijan is now playing a threefold role in the Turkey energy market: "supplier for domestic markets, contributor/enabler for transit projects, and investor"[232]. With the realization of the BTC[234] oil pipeline in 2006, Azerbaijan has acquired more international self-confidence and has established a stable relation in regional affairs with Turkey. The focus is now moving from oil to natural gas, both from the Turkish and Azeri side. After having monetized oil revenues and invested on the "Shah Deniz" gas field, Baku has started to exploit its underwater gas reserves, satisfying its needs for an energy market and new export routes. As a consequence, as seen before, Azerbaijan resistance against Russian efforts to acquire most of the Azeri natural gas through an aggressive commercial policy, has been converted into the preference for Turkey and the concretely possibility to penetrate the European markets, clearly showing the Azeri intent toward an integration into the Western world economy.

From the Turkish perspective, two principal factors facilitated the approach with Azerbaijan in the natural gas ground: "the aggregation of Turkey's supply security consideration and the EU's new-

[229] International Energy Agency (IEA), Oil and Gas Security Emergency Response of IEA Countries. Turkey 2013 update, Paris, IEA, 2013.

[230] Erkan Erdogdu. Turkey's Energy Strategy and its Role in the EU's Southern Gas Corridor, Febbrary 2014, Istituto Affari Internazionali, IAI, Rome.

[231] The "New Great Game" is a conceptualization of modern geopolitics in the Middle East as a competition between the United States, the United Kingdom and other NATO countries against Russia and China for "influence, power, hegemony and profits in Central Asia and the Transcaucasus" as cited in the book from which this dynamc bring the name, Lutz Kevleman's "The New Great Game: Blood and Oil in Central Asia" - http://en.wikipedia.org/wiki/The_New_Great_Game

[232] Şaban Kardaş. The Turkey-Azerbaijan Energy Partnership in the Context of the Southern Corridor, Istituto Affari Internazionali, IAI, March 2014, Rome.

[233] With the support and the approval of the USA and the Euroepan countries (edn)

[234] Baku–Tbilisi–Ceyhan (BTC) pipeline constructed and most financed by British Petroleum - http://en.wikipedia.org/wiki/Baku%E2%80%93Tbilisi%E2%80%93Ceyhan_pipeline

found interest in tapping the Caspian basin natural gas reserves"[232]. On the square, Azerbaijan initially was considered only a transit country through which gas produced in other Caspian-basin countries should have passed, but the discovery of major offshore reserves in its own sectors in the Caspian has changed Azeri's role, permitting it to become a major supplier coming to the forefront over time[235]. As a gas supplier, Azerbaijan became suddenly important for Turkey, at the same moment in which it was intensifying its efforts to diversify its imports away from Russia and Iran with the construction of the BTE[236] (Baku-Tbilisi-Erzurum) gas pipeline, became operational (2007). This not only allowed Turkey to access to cheaper gas, but also equipped Ankara with the hedge against Moscow and Tehran.

Fig. 2 – The Baku-Tbilisi-Erzurum gas pipeline (South-Caucasus Pipeline)

Source: Thomas Blomberg for Wikipedia

The BTE pipeline was constructed parallel to the BTC pipeline (which transports oil), under the terms of supply agreement Turkey is supposed to import gas produced from Shah Deniz I[237] under preferential terms, even though only for an initial period. The talks for the revision of prices, while

[235] John Roberts. The Role of Azerbaijan in European Gas Supply and Greek interest, in ICBSS (International Center for Black Sea Studies), Policy Briefs, n° 15 May 2009 - http://icbss.org/media/128_original.pdf
[236] Baku-Tblisi-Erzurum gas pipeline aka the South Caucasus pipeline - http://en.wikipedia.org/wiki/South_Caucasus_Pipeline
[237] This phase included the initial activities of expoiting the Azeri's Caspian gas field and started in 1999 – British Petroleum BP - http://www.bp.com/en_az/caspian/operationsprojects/Shahdeniz/SDstage1.html

Turkey was trying to normalize diplomatic relations with Armenia in 2009, lingered for a long time[238], highlighting Azerbaijan supremacy position as huge supplier in the international energy arena[235].

The Azeri's primary geopolitical position is also emerged in the development of the "Southern Corridor", underlying the fact that is more possible for Azerbaijan to become the crucial energy hub for the EU than for Turkey. Baku in fact controls the total amount of the natural gas passing through Turkey and supposed to arrive to Europe. At the same time, the country has greeted many European companies, alongside with the Azeri's state-controlled "Socar" and other foreign shareholders, to sign a "Gas Sales Agreement"[239] for the development of the "Shah Deniz phase II".

According to the development of the "Southern Corridor" through TANAP, to have Azerbaijan as partner also permitted Ankara to elaborate a supply contract that granted it the right to re-export Azeri gas to Greece, in order to fully exploiting the Interconnector Turkey-Greece(-Italy)[240] (ITG). By most projections, whatever "Southern Corridor" project was definitely developed, proceeding with the Azeri gas procurements and then including other Caspian-basin or Middle Eastern suppliers represents the primary common strategy. From the moment in which a phase of mutual understanding concerning the energy field has been inaugurated in 2011, Azeri-Turkish partnership has increased, especially in terms of foreign direct investments in downstream markets and efforts in developing the Trans-Anatolian Pipeline Project (TANAP). BTE alone would not be able to accommodate additional volumes from "Shah Deniz II" and TANAP could greet both Azeri and other countries further supplies. In this context, commercial clauses are well planned: the Azeri state-controlled "Socar" will control about 58% of the shares in TANAP, which has an approximate value of 12 billion dollars, along with the 12% of the British Petroleum (BP) and the Turkish 30%[232]. With this operation, Turkey will receive larger volumes of Azeri gas at prices more favorable than those which it currently pays on average. This could help Ankara to gain leverage with Russia and Iran for future import negotiations. Furthermore, by holding 30% of the shares in TANAP, Turkey will move beyond being both a sole consumer and a transit country, starting so to be influential in upstream[241] and midstream[242] positions. The "Shah Deniz phase II" gave a second

[238] HurriyetDailyNews.com - http://www.hurriyet.com.tr/english/finance/9976138.asp

[239] Shah Deniz Major Sales Agreements with European Gas Purchasers Concluded, British Petroleum – bp.com - http://www.bp.com/en/global/corporate/press/press-releases/shah-deniz-major-sales-agreements-with-european-gas-purchasers-c.html

[240] Natural gas pipeline connecting Turkey and Greece and completed in 2007. The part concerning Italy is still on discussion even though the TAP project proposed to substitute that final segment across the Adraitic sea. - http://en.wikipedia.org/wiki/Interconnector_Turkey%E2%80%93Greece%E2%80%93Italy

[241] Exploration and extraction activities, when natural gas is extracted from the ground. (edn)

life to the Southern Corridor idea, supposed to be on a deadlock in the moment in which "Nabucco" has been rejected. Azerbaijan's decision to finance the majority of the project underscored to growing confidence for the country in energy geopolitics: "Socar's" downstream investments for instance indicate a progress toward boosting its economic and political independence. Turkey too, as the co-financer of the TANAP project, shows its willingness to play a relevant role, manifesting more enthusiasm than for the "Nabucco", mostly promoted only by Europe. Moreover, despite Azerbaijan will not be willing to allow additional competition in the Caspian Sea natural gas arena, Turkey is still keeping open the Turkmen doors, working on alternatives beyond the Azeri gas and the possibility to develop the "Trans-Caspian[194] Pipeline". However, the settlement of this political initiatives can jeopardize the yet unstable situation in the region, even if a joint venture embracing a third country like Turkmenistan, can be useful to establish a trilateral dialogue in order to strengthen energy supply capacity. From an economic perspective, what is remarkable is the inversion of the trend of Turkish and Azeri foreign investments. If previously the tendency was for Turkish foreign investments to flow into Azerbaijan, for instance with the TPAO's[243] operation, in recent years, Socar's acquisition of a majority stake in Turkey petrochemicals company PETKIM[244] have represented a crucial move. Thanks also to the TANAP project, Azerbaijan is becoming the largest source of foreign investments in Turkey, at an amount of 21 billion dollars[232], showing that Azeri energy revenues have become so much profitable to permit the government to consolidate its position even abroad.

In this context EU-Turkey relationship represent an important mean in order to acquire political and economic relevance for both regions. A crucial point is denoted now by the Turkish fluctuating EU membership, about which Turkish politicians have long discussed as being a measure to bring the EU and Turkey closer[227], contributing so to solve the problem of EU south east countries energy security. However, even though initial Ankara's efforts to get closer to the EU have been showed by the decision of BOTAS[245] not to extend 6-bcm Gazprom's supplies contract expired in 2011, substituting it with the sign of a new purchase agreement for Azeri's "Shah Deniz Phase II" production to a plateau volume of 6 bcm per year, the decision to continue the Turkish-Russian energy partnership, in the aftermath of the "South Stream" abandon, shows that Ankara is more

[242] The midstream sector involves the transportation (by pipeline generally for natural gas), storage, and wholesale marketing of natural gas as raw material. (edn)
[243] Turkish Petroleum Corporation - http://en.wikipedia.org/wiki/T%C3%BCrkiye_Petrolleri_Anonim_Ortakl%C4%B1%C4%9F%C4%B1
[244] Petkim is the leading petrochemical company of Turkey - http://en.wikipedia.org/wiki/Petkim
[245] is the state-owned crude oil and natural gas pipelines and trading company in Turkey - http://www.botas.gov.tr/defaultEN.asp

interested in becoming an energy (gas) hub for Europe, than keeping fare political relations with the it. In this context it is necessary to pinpoint that the European manifested interest on showing strategic and political advantage on developing the "Nabucco" project, as said in chapter 2, was a significant concern neither for Azerbaijan nor for the "Shah Deniz Consortium". The final decision, which determined the main natural gas injection into south east Europe, felt on TAP indeed. It offered lower transportation fees, higher prices at the terminus of the pipeline and additionally, it demonstrated to be a self-standing project fully financed (and mostly controlled[246]) by the "Shah Deniz" consortium shareholders. The selection of TAP once again indicate that without economic banking, the political ground is not enough as mean to realize large international investments, in which public and private interests are involved. What to take into account is that, from one side, international institutions should contemplate social and environmental issues for their citizen's benefits, considering that on the other side, private companies often put economic efficiency in a primary position. For sure, TAP and TANAP construction will encourage other resource-rich countries in the region to make their natural gas reserves available for the Western markets, also considering that the "Southern Corridor", as we understand it in its first phase, only provide for the 2% of European gas needs. An implementation therefore is needed to enlarge gas procurements, make energy markets more flexible in terms of prices and give the possibility to surrounding states to participate. In this context, solid agreements between EU, Turkey and Azerbaijan will contribute to include them into a concrete energy partnership. At the moment, only little efforts have been made to construct interconnections in order to reach CEE most critically needy states, such as Bulgaria, Romania and Hungary, still tied in high Russian gas dependence.

In this scenario Turkey position seems to remain neutral, highlighted by the fact that it is expected to be a winner in each options. In any case in fact, Turkey will receive larger volumes of Azeri natural gas assuring energy security for the country. Besides, despite the substantial foreign direct investments[247] Turkey will receive for the TANAP construction from Azerbaijan, it has already provided to ensure Azeri gas at a preferential rate, 12% cheaper than Russian gas[248]. About 100-120 billion dollars should be invested by Turkey in the energy sector anyway, in order to reach energy aims for 2023, as "Socar" reported in its website on December 2014, referring to the TANAP

[246] Mostly controlled by Shah Deniz Consortium shareholder – tap-ag.com - http://www.tap-ag.com/about-us/our-shareholders

[247] Both from Azerbeijan and EU (edn)

[248] Which is already furnishing the countries passing through the Bosporus. (edn) – see also - http://en.wikipedia.org/wiki/Bosphorus_Gaz_Corporation

project and to the Turkish energy ground[249]. Energy imports are the primary cause of Turkey's current account deficit which needs to be absorbed through an efficient up-to-date energy sector and efficient economic policies[227]. In this view, it is unlikely that TANAP and TAP could solve, not even partly, the EU's energy security (and dependency) question or make Turkey an autonomous energy hub, at least if not before solved its internal economic problems.

The EU by its side is now focused on trying to persuade Turkey to align its legislation with the energy *acquis*[250], by joining the "Energy Community Treaty" (ECT)[251] with the purpose to establish a single regulatory framework to uniform energy trading across south-eastern regions and the EU. Turkey could think, as Bulgaria, Romania and Croatia have made, that entering the community would mean make a first little step in order to later join the European Union, even though the question at the moment seems to have been put aside by the Community. However, from the Turkish side, whether or not it will enter the community, upgrade on its natural gas grid and increasing storage capacity to host tradable natural gas volumes are two important issues to develop, if it want to become from a transit bridge to an energy hub[227]. For sure, it has to accompany this with a process of earning political confidence in order to became a reliable partner in political and as consequence, energy issues.

Despite the fact that Turkey's EU adventure has been going on for more than half a century[252], Turkey's Community accession could be a further strategic goal to pursue in order to finalize the energy integration process. This makes sense if we consider also a modernization and democratization process of the country started with the "Turkey's New European Union Strategy[253]", released in September 2014. The strategy is based on three main issues: political reform, continuing socio-economic transformation and the alignment to the Union's energy strategy. Various concerns over the deterioration and state of democracy in Turkey over the past years, particularly following the 2013 events[254], have hurt the accession process and Turkey's relations with the EU. In this context, natural gas is one of the key topics that are of mutual strategic

[249] Natural Gas Europe – naturalgaseurope.com - http://www.naturalgaseurope.com/turkey-invest-usd-100-120-billion-target-socar

[250] The set of European Community's energy norms – energy-community.org - http://www.energy-community.org/portal/page/portal/ENC_HOME/ENERGY_COMMUNITY/Legal/EU_Legislation

[251] A Treaty including the EU and other external countries which forms the Energy Community with the intent to create a more cohesive energy market – energy-community.org - http://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/2796177/Pages_from_2178178.pdf

[252] Started with the 1959 association agreement with the European Economic Community. (edn)

[253] Europe.eu. Turkey's New European Union Strategy - http://www.abgs.gov.tr/files/pub/turkeys_new_eu_strategy.pdf

[254] In particular domestic turbulence in May-June 2013 with the Taksim Gezi Park protests in Istanbul against the controversial Erdogan administration and the December 2013 police investigation into alleged corruption and bribery targeting senior government officials. (edn)

interest both for Turkey and the EU: they indeed share common energy challenges, objective and policies. Much analysis made indicate that energy will be the main issue for future EU-Turkey relations, specifically based on fossil fuel[255]. In this sense, if future developments of Turkey policies to become an energy hub, linking demand and supply centers of east and west as well as north and south will be realized, both Turkey and the Union can benefit. EU (at the time) energy commissioner Günter Oettinger and Turkish Ministers Egemen Bağiş have agreed on the fact that at least five topics of mutual interests, three of which concern the gas sector, have to be developed before this process will take place, when they met in June 2012 signing an agreement of cooperation[256]. These include the elaboration of long term perspectives on energy scenarios and energy mix; the market integration and development of infrastructures of common interest; global and regional energy cooperation; (as well as promotion of renewable energy, energy efficiency and clean energy technologies; nuclear safety and radiation protection).

In this context the "Southern Corridor" plays a central role due to the huge efforts both EU and Turkey have to join together in the construction of those projects (TAP and TANAP) that are going to complete the "Corridor", not later than the end of this decade.

Fig. 3 – Possible evolution of the "Southern Gas Corridor"

Source: Platts, 2013

[255] European Commission. In-depth Study of European Energy Security, July 2014 – europe.eu - http://ec.europa.eu/energy/doc/20140528_energy_security_study.pdf

[256] European Commission. Enhanced EU-Turkey Energy Cooperation, Stuttgart, June 2012 – Europe.eu - http://europa.eu/rapid/press-release_MEMO-12-434_en.htm

3.3 EU foreign policy moves and confrontations in the gas sector

At this point, provided that the EU and Turkey have similar energy policy goals, such as improving security on energy supplies and ensuring competitive energy markets, they on the contrary have very limited synergies in formulating their energy strategies. In the gas field in fact, a more cooperative activity between the ENTSO-G and BOTAS should be enhanced. In this sense, to diversify sources of supply and routes it is a necessary but not a sufficient element in the process of improving the EU energy security[257].

In this scenario, a possible antagonist can also emerge from the Russian side: relations between EU and Russia in the energy field has arrived to a thorny point, especially from the moment in which, on September 2012, the European Commission antitrust branch opened formal proceedings against Gazprom, accused to have violated EU competition rule[258] in the Central and Eastern European gas markets. Having a look to what at the time, European Commission Vice President and Commissioner for Competition, Joaquin Almunia, has reported, the Commission was not investigating on Gazprom behavior for any political reason, but simply to certify that the company has not abused its dominance in upstream gas supply markets[259] even though, as a matter of fact, finally President Putin has decided to abandon of the South Stream project. With that action, it is reasonable to think that it represented an EU attempt to give more relevance to its supervisor institutions as well as to enforce the EU "fair competition law". The importance of the energy field and the legislation that regulates it has been long given by the "European General Court" and the "European Court of Justice", underling among the most important principles those of "fair competition" as fundamental and necessary to dispose the general issues of the EU law[260]. By contrast, Russia saw the antitrust move as a political action in order to pressure Gazprom and influence prices as a result of unsatisfying commercial negotiations[261]. Certainly, the Commission's investigation could hardly keep out the question Russian political elite, since Gazprom is a state-controlled company managed by top Russian officials and which exert a certain degree of influence

[257] Sohbet Karbuz. EU-Turkey Energy Cooperation: Vhallenges and Opportunities, November 2014, Istituto Affari Internazionali, IAI, Rome.
[258] Case n. 39816 – europe.eu - http://europa.eu/rapid/press-release_IP-12-937_en.htm
[259] Joaquin Almunia's speech – europe.eu - http://europa.eu/rapid/press-release_SPEECH-12-653_en.htm
[260] Nicolò Sartori. The European Commission vs. Gazprom: An Issue of Fair Competition or a Foreign Policy Quarrel?, March 2013, Istituto Affari Internazionali, IAI, Rome.
[261] We should remember that also Microsoft, Intel and General Electric have experienced the Commission investigation on their activities. Also European energy companies such as ENI, Gaz de France, E.On and RWE has been included in the Commission investigation activity (edn) – The Intel example – The Wall Street Journal, April 6, 2001 - http://online.wsj.com/news/articles/SB986556881975615891

over the country's foreign policy. Concretely anyway, Gazprom has been accused for supposed illicit market partitioning[262], construct unconventional barriers to supply diversification, denying the access to the pipeline network to third-party gas suppliers. The Commission action also concern unfair pricing activities, through which Gazprom was supposed to sell gas with long-term "take or pay" contracts, which link the price of gas to the price of oil. Gazprom has long demonstrated its interests to keep its well-distributed presence in the European energy market, being at the same time the main single supplier for it, even though sometimes using questionable methods. The development of the South Stream, in the south east Europe context, was one of the principal moves undertaken by Gazprom and conceived to consolidate and expand its position of power, testimony of the current dependence of some of the largest European economy, such as Germany and Italy. In this context, unfair actions undertaken by Gazprom could be reasonably taken into account, as well as European Commission "double standard" analysis in order to preserve its energy market from massive external penetration.

Fig. 4 – EU gas imports from Russia for country destination

Country	Imports from Russia (bcm)	Share of total national consumption (%)
Austria	6.10	65.7
Belgium	0.29	1.5
Bulgaria	2.77	85.5
Czech Republic	8.86	100.0
Estonia	0.62	100.0
Finland	4.04	100.0
France	6.13	14.5
Germany	30.49	40.0
Greece	2.65	58.2
Hungary	5.11	45.8
Italy	19.18	25.0
Latvia	1.70	100.0
Lithuania	3.42	100.0
Luxembourg	0.28	22.7
Netherlands	1.98	4.8
Poland	9.87	64.0
Romania	2.98	21.8
Slovakia	5.79	100.0
Slovenia	0.42	47.7

Source: ENI

[262] Divide Russian gas supplies into various national sub-markets, neglecting single states to sell the Russian gas arrived. (edn)

The current situation displays that Gazprom has divided the European market into two parts: on one hand it has developed key relationships with some among the most important western European costumers, to which it grant cheaper gas prices (although still too high compared to spot market prices, before the oil prices decline) and better contractual conditions. On the other, Gazprom is said to have established unfair business practices thanks to Eastern Europe countries high dependence, by exerting political and commercial pressure in the region[263]. This vision help us to explain EU worries on gas price differentials[264] among different regions in the European territory, not directly coming due to market forces but from the abuse of Russian Federation of its dominant position. The Russian attitude in fostering a strategic political and economic imbalance, have helped to create benefits for the former soviet state at the expense of eastern European citizens. The same eastern states that now, in the aftermath of the Ukrainian conflict and after the abandonment of the "Nabucco" and "South Stream2 projects, are searching for gas supplies which can cover the blank space left from Russia change of route, looking to south-east Europe regions and the possible implementation of the "Southern Corridor". To tell the truth, things have started to get even more complicated now for Gazprom. In the first half of 2014 the Italian ENI had announced that it was not going to invest more than 600 billion euro for the Gazprom-led "South Stream" gas pipeline project, in which it had make investments for the 20%[265] of the total amount[266]. The project had become too risky and onerous for the Italian energy company. Ceo Claudio Descalzi has recently reported that all the partners were having difficulty finding funding for the project, which was supposed to go beyond the ten billion euro[267]. Secondly, President Putin recent declaration that the "South Stream" has been abandoned in favour of a pipeline that will connect the Russian territory and Turkey through the Black Sea, has brought Russia to buy all the project major shareholders' percentage, including ENI's "Saipem" slice[268].

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[263] Jan Techau. Russia's Geopolitical Gazprom Blunder., in Judy Dempsey's Strategic Europe Blog, November 2012 - http://carnegieeurope.eu/strategiceurope/?fa=49911

[264] the difference in price between two products, or the difference in prices in different places when the same product is sold in more than one place – Cambridge dictionary online - http://dictionary.cambridge.org/dictionary/business-english/price-differential

[265] ENI participation on South Stream – south-stream-offshore.com - http://www.south-stream-offshore.com/about-us/shareholders/

[266] Andrea Greco. Descalzi: "Eni non più di 600 milioni per South Stream. Senza banche, siamo fuori", article in repubblica.it - http://www.repubblica.it/economia/finanza/2014/11/04/news/descalzi_eni_non_spender_pi_di_600_milioni_per_south_stream_senza_finanziamenti_bancari_potremmo_uscire_dal_progetto-99740470/

[267] Natural Gas Europe. Eni may cap South Stream participation - naturalgaseurope.com - http://www.naturalgaseurope.com/eni-south-stream-financing

[268] Eni cede a Gazprom la sua quota nel gasdotto South Stream (20%), article in "Il Sole 24 Ore", December 29th 2014 - http://www.ilsole24ore.com/art/notizie/2014-12-29/eni-cede-gazprom-sua-quota-gasdotto-south-stream-20percento-213114.shtml?uuid=AB4dfiWC&fromSearch

Probably Europe position toward the "South Stream" would not change in this view, putting aside Russian decision to abandon it and looking to new alternatives in order to increase its energy security in Southern and Eastern Europe. A huge contribute could surely come from the "Southern Corridor" which, if implemented, could reach also the Balkan and other Central Europe states. What instead mainly concern the Union are the economic terms undertaken by the biggest Russian energy company with its clients, most of them European member states. Specifically, Gazprom prefers to conclude long-term contracts with its partner companies, according to the so-called "take-or-pay" principle. This principle supposes that each Gazprom's contractors with such a clause is obliged to pay for an agreed-upon minimum amount of supplied gas, whether it consumes it or not. Most of these long-term contracts which tie Gazprom and two European biggest economies such as Germany, excluded in the "Southern Corridor" discourse, but as well Italy, one of the main actors in that context and which is searching for interesting alternative for the future of its energy supply with the "Southern Corridor" construction, expire in 2025. However, these contracts ensure Gazprom a relevant position in the European gas market for about a decade to come[269]. Only recently, these Gazprom's main costumers, according to the increase of a global and differentiated gas supply, has moved toward different direction in order to buy natural gas from other sources and pay it through simple spot market prices. Doing so, a dispute between buyer and seller is now taking place, suggesting that it would be difficult for Gazprom in the near future to continue implementing its old pricing policies including "take-or-pay" principle[260].

Ultimately, the patterns of global gas supplies are shifting in a way that has implications for EU foreign policy. Member states have traditionally pursued their national interests in securing gas supplies rather than wait and actively collaborate for a common EU guideline in order to orient their actions in relation to an effective energy diplomacy. In the last three years, the EU has however made some effort to solve this shortcoming, especially since 2012, when the European Commission has enforced the idea of stopping governments for undercutting common EU aims when they sign energy contracts with suppliers. The Union has perceived that, in order to ensure its energy interests, it is necessary to make external countries incorporate the rules of the EU's own internal market. The development of such kind of stable politic and economic framework can help to guarantee predictable and cost-effective gas supplies. In this context, the EU is slowly realizing that in a moment of European energy sector uncertainty, a more intense geopolitical activity in a global

[269] Ariel Cohen. Caspian Gas, TANAP and TAP in Europe's Energy Security. Istituto Affari Internazionali, IAI, April 2014, Rome.

scale is needed[270]. To this purpose, EU has signed multiple bilateral energy accords with Central Asia's states such as Azerbaijan, Algeria, Egypt and others, reflecting a more geopolitical approach toward energy security. However, it is necessary to evaluate whether or not national largest energy companies in each member nation would stand up for giving up exclusive contracts in favour of EU single contracts for all 28 members, as a public policy at the core of an energy union.

This large discussion on the evolution of the European and also non-European geopolitical and economic dynamics has shown how the Community is able to partially fill its energy security uncertainty, especially in terms of cohesive actions and decisions in order to make each member to follow the same direction. More attention should be given to the confrontation on the foreign policy side, including also private or non-governmental actors. The bent of some member states of ceding part of their sovereignty to the EU, which can plays as main actor and manage some issues for the Union in its entirety also in the energy field, can be considered as positive strategic moves. As Simone Tagliapietra, researcher at the "Fondazione Enrico Mattei", has underlined in his "Towards a European Energy Union The Need to Focus on Security of Energy Supply", rejoin a common strategy is now more useful than ever:

> This is unlikely to occur in a situation of general stability, when a business as-usual approach tends to characterize the EU policy making. On the contrary this might well occur in a situation of urgency determined by a sudden change in the external environment, as the perception of external threats might ultimately lead the EU member states to strengthen their union.

It is however difficult to understand if this exceptional historic moment, in which particular preoccupation is given to the increasing of EU energy security, can be considered as stable or, on the contrary, needing of concrete actions in assuring energy solidity. Certainly, seasonal sudden increasing demand accompanied to a more global energy market fragmentation, as well as the 2006 Ukrainian crisis and the abandon of the "South Stream" project, concerning legal complication but also due to the political pressure that a new economical blocks division is exerting, has all led to an unprecedented reconsideration of the EU-Russia energy partnership. At least at the EU level, including farer geographically allocated project, as the "Southern Corridor" is, which exclusivity is now threatened by the presence of the new Russian-Turkish pipeline. To develop solid partnership with strategic third countries is essential now for the Union. Close relations with Turkey, Azerbaijan, Turkmenistan or even in the Middle East, with gas-rich countries such as Iran, thanks to

[270] Richard Youngs. A New Geopolitics of EU Energy Security. September 2014, Vanguardia Dossier, in Carnegie Europe, Brussels.

which the Southern Corridor could achieve new important implementations of supply, represent today an urgent question. The Turkish case is particularly to take into account, since the support of Ankara should be not taken for granted by the EU. The country may prefer to secure its own energy supply on a bilateral basis with gas producing countries, especially now that Russia has announced its intention to implement the gas interconnections through the Black Sea. Moreover, to set up new financial schemes to support the development of strategic energy infrastructures is an essential move for the EU. It is not possible for a single member state to make economic efforts alone in financing large projects as the "Southern Corridor" is. The EU in this context has to expand its behavior beyond mere coordination and supervision activity, by financing or co-financing infrastructures, for instance, which represents a fundamental action. To launch new solid projects, designed to enable the issuance by project companies, like public private partnership (PPPs)[271], of long-term well-rated bonds instead of relying only on bank leading, might also be considered as an option in this context[272].

The competition for "Shah Deniz" gas was long and intriguing. Various actors, with different interests at stake have been involved. While apparently it could be accepted as a victory for Europe, the consortium verdict entails both winners and losers in the game. The main winner for sure is Azerbaijan, thanks to its clever tactical activity and unexpected negotiation skills it has fulfill its goals of diversifying gas exports. From one side it has established closer relations with the EU, giving the possibility to solve diversification problems for part of its southern regions. From the other, launching the TANAP initiatives has allowed "Socar" to extend its control over midstream activities on Turkish and EU territory[273]. Furthermore, the rapid development and negotiations with Turkey for TANAP has indirectly influenced the decision to push forward the TAP project, which supplies will be mostly controlled by "Socar" and its partner shareholders. A witness to the "Socar" political and economic enforcement is the signature, in August 2012, of the "Funding, Equity & Shareholding" agreement between the "Shah Deniz" consortium and TAP. This operation, besides the already dominant position in the TANAP project, will give to "Socar" control 20% stake in TAP[273]. Moreover, as said in the previous pages, the acquisition of the Greek "Desfa" completes the pattern[273].

[271] It is a partnership between public and private companies which operate together for a certain project http://en.wikipedia.org/wiki/Public%E2%80%93private_partnership

[272] Simone Tagliapietra. Towards a European Energy Union The Need to Focus on Security of Energy Supply, 2014, Fondazione Eni Enrico Mattei FEEM, Milano.

[273] Nicolò Sartori. Energy and Politics: Behind the Scenes of the Nabucco-TAP Competition, Istituto Affari Internazionali, IAI, July 2013, Rome.

In this view, those countries involved in the initially planned "Nabucco" are the real losers. States such as Austria, Bulgaria, Hungary and Romania invested heavily in it and now face the possibility for possible gas cut in the near future, considering their closeness with Ukraine[274] and the difficulty on detaching from Russia dependence, especially today in the aftermath of the South Stream abandon. Russia for sure, can still rely on its energy resources vastness and decide to move toward different route, like Turkey. The former soviet state has however to deal with oil prices decline and the consequent national currency fall in price. Differently, as regards the European Union in its entirety, it could be considered a positive starting point for the Union's intention to provide new volumes of natural gas through new southern transit routes. An important result have to be bitterly reported, 70% of the gas entering the southern Europe gas market through the "Southern Corridor" will be transported by pipelines owned by energy companies involved in non-European activities, even though part of them are European[273].

[274] This especially concerns Bulgaria, Hungary and Romania although recent agreements between EU and Russia can mitigate those problems. – reuters.com - http://www.reuters.com/article/2014/10/30/us-ukraine-crisis-gas-idUSKBN0II0XQ20141030

FURTHER ALTERNATIVES AND OUTLOOKS
New actors' involvement, the question of LNG and unconventional gas

4.1 A look outside the EU boarders: Israel and Cyprus

The historical evolution of the "Southern Gas Corridor" and, in particular, the rise and fall of the "Nabucco", has clearly demonstrated how a multilateral and large-scale project based on a variety of natural gas supply sources, turned finally out to be a bilateral and medium-scale pipeline with only one main supply source, Azerbaijan. The current dilemma concerning the EU regards the "Southern Corridor" capacity implementation in order to cope with exceeding gas demand problems as well as international crisis possibly affecting south east Europe gas supply security. Today's situation anyway displays that neither the construction of TANAP nor TAP, the two main "Southern Corridor" vectors, have started. TANAP, in fact, as Magsud Mammadov, "External Relations Director" of the project, has reported in a conference dedicated to the "Southern Corridor", the "Romania Oil and Gas Conference" in Bucharest[275], will start in April 2015 which is supposed be completed in 4 years. The pipeline will be operational in Turkey by 2018 and finally will join TAP[276] by 2019. What to underline in his speech, is the fact that he does not neglect the participation of future possible contributing gas sources, either they come, for instance, from Northern Iraq or the Eastern Mediterranean region, changing what were the supposed actor of the project until a short time ago. In this sense, the "Southern Corridor's" doors are open, external partner should in addition take advantage of the fact that for the project, the EU's "unbundling" or "third party access"[277] clauses are not applied, in order to facilitate initial organizational efforts. Framework that similarly was not the same for Russia, when the EU legislation intervention contributed to compromise the success of the "South Stream" project in Bulgaria, as seen in the previous chapter.

In this context, the role of some Middle East countries and other Mediterranean contributors has not been put aside, although those area's political instability have often suggested the abandon of this hypothesis. However, taking into account a medium-long period context, this view is relevant to be

[275] November 2015, Romania Oil and Gas Conference – Romania-og.com - http://www.romania-og.com/Home.aspx
[276] Trans-Adratic pipeline (edn)
[277] Both contained in the "Third Energy Package" (edn)

considered: possible further evolutions of the energy plan for Europe[278], especially if we consider the EU intent to implement the "Third Energy Package", and likely changing political stability of Middle East and Mediterranean states, can be soon take place.

The south-east Mediterranean region for instance, being historically important for South Mediterranean Europe, has increased its interest over a cooperative approach with the EU in the energy field, also thanks to recent offshore gas discoveries in the area. A report of the "United States Geological Survey" (USGS) of 2010[279], displays that the size of the discovered fields in the South-East Mediterranean countries suggest that, excluding the amount disposed for domestic consumption, a considerable amount would remain to be exported. This in any case indicates that financing operations are needed from external actors in order to support the development of upstream activities; considering that, as a consequence, choose exports for some countries could become a necessary choice. In the "Southern Corridor" context, an implementation of supply sources is expected by Europe in order to avoid Russian dependence and enlarge the amount of natural gas entering Europe through TANAP and TAP, supporting its main supplies of Caspian gas. Turkey for sure will play the role of the best candidate on becoming a transport route for the South-East Mediterranean countries' gas, thanks to its littoral position and the desire to increase political clout in the international relations arena.

The USGS also estimates that around 10 tbc[280] of natural gas in the two main basins of the Eastern Mediterranean, the Levant and the Nile delta are unexploited[281]. The first have been discovered in the 1999-2000 period and includes "Noa"[282], "Mari-B"[283] and the "Gaza Marine Fields"[284], which is estimated to hold 3,4 tcm of natural gas. The second, it is not clear how large it is but is estimated by USGS to hold most of the gas in the south east Mediterranean area. The question now lies on the fact that the total amount of these discoveries makes only sense if export is considered. In this vision in fact, regional cooperation is required for those countries involved, in order to avoid supply surplus problems. The territories in which the discoveries have been made include Israel, Cyprus and Palestine, which are forced in this vision to take into account the possibility to start a

[278] Long-term contracts are going to end for many Russian-import dependent European states and some planned pipeline, such as TANAP and TAP will be operative by 2020 (edn)
[279] USGS.gov - http://www.usgs.gov/newsroom/article.asp?ID=2435#.VIHEEMlwmaw
[280] Trillion cubic meters (edn)
[281] US Geological Survey, Assessment of Undiscovered Oil and Gas Resources of the Levant Basin Province, Eastern Mediterranean, Fact Sheet 2010 No. 3014, March 2010 - http://pubs.usgs.gov/fs/2010/3014/ and http://pubs.usgs.gov/fs/2010/3027/
[282] Noa - Reuters.com - http://www.reuters.com/article/2012/06/24/us-noa-israel-idUSBRE85N0GR20120624
[283] Mari-B in the Tamar gas field - http://en.wikipedia.org/wiki/Tamar_gas_field
[284] Gaza Marine Field - Offshore-technology.com - http://www.offshore-technology.com/projects/gaza-marine-gas-field/

confrontation in the international market with other neighbor countries, such as Iran, Qatar, Russia and Turkmenistan for instance. In this context, Israel has started explorations since the 1990s, while the Republic of Cyprus has explored its first substantial discovery in the same period on its Aphrodite Field[285], next to the largest gas field in the area, the Leviathan field[286].

That area states are conscious of the enormous resources existing in the subsoil. As a witness to this also Syria had launched oil and gas explorations, although the current internal conflict is making difficult the question. In addition, Lebanon has carried out surveys in some areas identified as potential resources, which estimate to hold around 700 bcm of natural gas in offshore fields[287]. The question of south-east Mediterranean's undiscovered or unexploited natural gas resources is articulated and involves various international actors. This issue not only represents a method to satisfy states' gas needs, but also is a profitable mean for international players to enlarge their relevance in the international energy markets.

Russia for instance is not to be put aside in this context: it is as well playing a central role in the area. In 2012 the former soviet state has signed a "Memorandum of Understanding" (MOU)[288] for the development of an offshore gas field, known as "Tamar Field"[289], even though later it has moved toward other alternatives. In October 2013, it signed another energy cooperation agreement (MOU) in order to develop natural gas in Lebanon which, in this case, was expected to be terminated in 2014. Meanwhile, in the same year, Russia has foster negotiations both with Syria, in order to explore its offshore "Block 2"[290], and with the Palestinian Authority, for the development of the "Gaza Marine Field"[284].[287] in this context, it is necessary to report that in some cases, such as for Lebanon, Syria and the Palestinian territory, the possibility for a current gas field concrete exploitation remains uncertain. Instead, in other cases, like Israel and Cyprus, the opportunity to become soon the first natural gas exporters countries in the area, is very high. Israel, for instance, is already exporting 40% of its natural gas extraction to its immediate neighbors, Jordan and Palestine,

[285] Is an offshore gas field off the southern coast of Cyprus located at the exploratory drilling block 12 in the country's maritime Exclusive Economic Zone - http://en.wikipedia.org/wiki/Aphrodite_gas_field

[286] Is a large natural gas field located in the Mediterranean Sea off the coast of Israel - http://en.wikipedia.org/wiki/Leviathan_gas_field

[287] Elif Burcu Günaydin. Can South-Eastern Mediterranean Gas be a Supply for the EU?, November 2014, Istituto Affari Internazionali, IAI, Rome.

[288] Memorandum of Understanding, which indicate common lines and behaviour, as well as cooperation between actors - http://en.wikipedia.org/wiki/Memorandum_of_understanding

[289] Is a natural gas field in the Mediterranean Sea off the coast of Israel. The field is located in Israel's exclusive economic zone, roughly 80 kilometres (50 mi) west of Haifa in waters 1,700 metres (5,600 ft) deep - http://en.wikipedia.org/wiki/Tamar_gas_field

[290] Rt.com - http://rt.com/business/syria-oil-gas-russia-795/

in addition to its operating foreign liquefied natural gas (LNG) terminals in Egypt[291]. Differently, the Republic of Cyprus[292] is a bit slower in the development of an autonomous gas system production, given the absence, until recent discoveries, of natural gas in its energy mix, as well as to the necessity of before unsustainable economic efforts to foster exploitation practices. Infrastructures have to be developed in a gas system in which, excluded the small amount needed for domestic consumption, most of the natural gas extracted can be exported. Uncertainty in this case lies on expert's suggestion whether estimated gas resources are sufficient or not to permit those states to become a relevant exporter in the international energy ground[287]. Meanwhile, Italian ENI and, in particular, its natural gas specialized wing, "Saipem"[293], accompanied by the "Korea Gas Technology Cooperation" (KOGAS)[294], have already started extraction activities on Cypriot's "Block 9[295]" field, under the joint venture named "Onasagoras", in September 2014. Moreover, the French "Total" has planned to start drilling by mid-2015 "Block 10", "11" and "12"[296].

Despite operative dynamics have already started, we might consider however the background characterizing those new countries entering the international energy market. The region is marked by a particular geopolitical situation, differently from economic-driven implications that mainly identify other regions like the Caspian or Turkey. Particular attention must be given to an area in which an almost military confrontation is at stake in the everyday agenda, both in Israel and Cyprus case.

[291] Data from nobleenergyinc.com - http://investors.nobleenergyinc.com/releases.cfm

[292] the Republic of Cyprus is an island country in the Eastern Mediterranean Sea and a member state of the European Union. Its population is composed by Greek-Cypriot. It is the only state reckonized by the international community in the island, differently from the northern part of it, which has been occupied by Turkey since 1974 constituing the so called "Northern Cyprus" and composed by a population of Turkish-Cypriot - http://en.wikipedia.org/wiki/Cyprus; see also, http://en.wikipedia.org/wiki/Northern_Cyprus

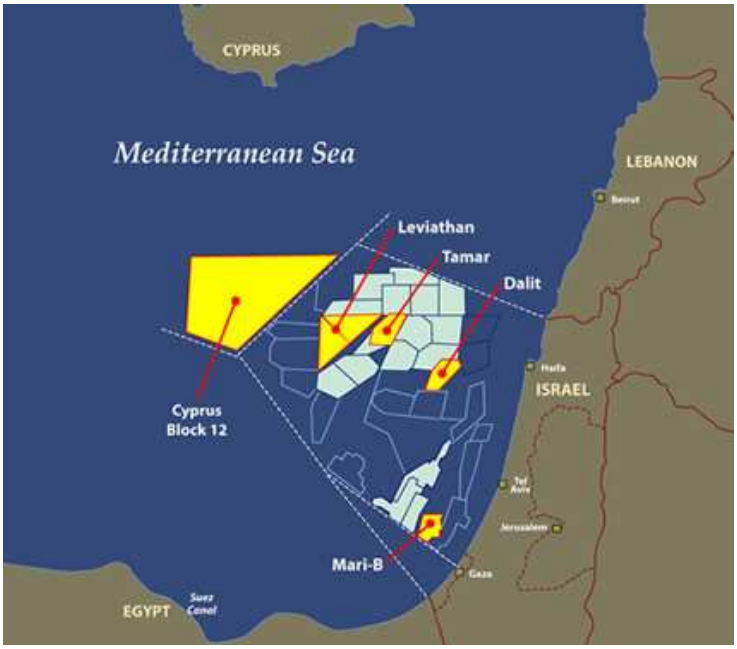
[293] Also involved as a majority investor and builder in the suspended Russian-led South Stream project – saipem.com - http://www.saipem.com/site/home.html

[294] Korean State-controlled natural gas company - http://www.saipem.com/site/home.html

[295] Saipem activities announced by CyprusMail - http://cyprus-mail.com/2014/09/26/saipem-starts-drilling-in-block-9/

[296] Also known as "Aphrodite Gas Field" - http://en.wikipedia.org/wiki/Aphrodite_gas_field

Fig. 1 – Israeli/Palestinian and Cypriot natural gas reserves



Source: Natural Gas Europe

The EU is preceding toward its energy diversification goals since a long time, but now more than ever this issue is becoming vital according to recent international relations developments. The sudden route inversion of the Russian natural gas interests, coinciding with the abandon of the "South Stream" and the consequent decision to move toward Turkey, underlines the importance of the "Southern Corridor" as a central pipeline for future European supplies. This is also proved by recent 2014 working document of "The European Energy Security Strategy" which touches current energy projects and the decision taken over financial investments to be developed[297]. Provided that this legislative framework will be embraced by south-east Mediterranean countries, also considering that European states and their major neighbor energy partners are interested in developing offshore Mediterranean plants, this could represent a relevant starting point in order to foster future energy policies and cooperative actions in the Mediterranean region. This interest in fact, has been clearly displayed in the "European Energy Security Paper"[297], released in May 2014, included in the European security strategy of the same year and underlying the EU intention to move toward the creation a Mediterranean gas hub. As a witness to this, a previous EU decision had included some south east Mediterranean areas, in 2013, into the "Projects of Common Interest[298]" of the European

[297] European Commission SWD(2014) 330 FINAL pag. 58- 59 – http://ec.europa.eu/energy/doc/20140528_energy_security_study.pdf
[298] See chapter two for detailed information.

Commission, as some of the most important actions to conclude not later than 2020[299]. Two main projects have to be developed in order to enlarge south east Europe gas supply security[300]: the "Mediterranean Gas Storage" of LNG Terminal[301] in Cyprus, with the aim to permit the exportation of Cyprus and Israeli gas for an initial amount of 6 bcm per year; and the "Eastern Mediterranean Pipeline" which represents another crucial question because it imply the construction of a subsea pipeline that propose to connect the "Levantine gas field"[302] to Greece, with a capacity of approximately 8,5 bcm per year. However, these proposal have before to be approved once that an economic analysis will demonstrated their financial feasibility, although MIT's studies has already shown the unviability of both initiatives[303].

In this context, considering latest developments of the gas sector in the Euro energy zone, what necessarily has been considered on the last redaction of the biennial PCIs[304] list is the planning of a useful project. The "East-Med pipeline" in fact has the aim to connect those purposed Mediterranean extra-European gas fields to south-east Europe, Turkey, and some other east Mediterranean countries, although Israel and Cyprus gas reserves are together around 500 bcm[305], so representing far less than what the average of Russian production yearly is. They can contributes for almost 5% of European total import per year, which represent a huge amount if it is considered only south-east Europe and the problem it is facing for its gas supply security. Approximatively, the gas contribution of these two countries destined to Europe, would be around 20 bcm per year, supposed that its 25-year development plan, needed for permitting the full functioning of the plants, will be developed[287]. For sure, huge efforts should be made on the political ground at first: an agreement which demonstrate an approach between Israel, Cyprus and Greece, the least considered as the destination country, has to be signed in order to create a common energy policy. Prices furthermore represent another crucial issue which particularly concerns the Israeli side: its current agreements in the gas field show that Israel natural gas prices are mostly linked to crude-oil prices,

[299] PCI for 2013 – europe.eu - http://ec.europa.eu/energy/infrastructure/pci/doc/2013_pci_projects_country.pdf
[300] Another project is the Euro-Asia Electricity Interconnector for the construction of a subsea cable in order to allow elctricity trade between Cyprus and Israel – Elif Burcu Gynaydin. IAI Working Papers 14/17, November 2014, Istituto Affari Internazionali, Rome.
[301] A plant which permits to reconvert liquefied natural gas (LNG) into natural gas for receiving countries and viceversa for producing countries. This converted gas will be later sent through traditional pipelines (edn)
[302] The Leviathan gas field is a large natural gas field located in the Mediterranean Sea off the coast of Israel. It is mainly under control of Huston-based Noble Energy (USA) - http://en.wikipedia.org/wiki/Leviathan_gas_field
[303] Massachuset Institute of Technology (MIT). Energy Initiative, Interim Report for the Study Natural Gas Monetarization Pathways for Cyprus pp. 75-77 – mit.edu - http://mitei.mit.edu/system/files/Cyprus_NG_Report.pdf
[304] EU Projects of Common Interest (PCI) – europe.eu - http://ec.europa.eu/energy/en/topics/infrastructure/projects-common-interest
[305] BP. Statistical Review of World Energy 2014 – bp.com - https://www.bp.com/content/dam/bp/pdf/Energy-economics/statistical-review-2014/BP-statistical-review-of-world-energy-2014-full-report.pdf

which means at the same time that are based, as well as Russian contracts basis, on long-term gas arrangements[287]. On the contrary, most of the European countries, which are still linked with such Russian contracts, are trying to elaborate policies in order to avoid those clauses, even though they remain tied to this condition only for few years. This however could represent a crucial point if EU and Israel will be establishing a common energy ground in term of a possible new foundation of the energy policy rules, posing more flexible spot market prices as an initial benchmark. Recent oil and gas market price decreasing have shown that a possibility to have oil-indexed contracts at a lower price than the spot market ones is realistic. In this view however prices and contracts should not represent a particular problem for those countries.

Nonetheless, these evaluations should be taken into account in the near future given that the "Leviathan gas field", the "Tamar gas field" and the "Aphrodite" one, are evolving rapidly to become on-stream not later than 2018-2019, proposing to export around 11 bcm per year together. A satisfying cost-effective method to buy and transport east Mediterranean gas to Europe should be taken into account, considering also that several options for acquiring gas from the region have been already evaluated in the past without given any concrete solution. However, existing pipelines are now connecting Europe with its major suppliers such as Russia, Norway and North Africa, another connection via pipeline with south-east Mediterranean countries could represent a remarkable initiative. What is to be taken into account in this context also is that the mentioned "Eastern Mediterranean Pipeline" (East-Med) could encounter both physical constraints, due to the difficulty of construction given by the fact that the majority of the pipeline would be undersea, and probable maritime disputes, due to the states involved proximity, certainly not helped by their political instability. Accounting this, another route for transporting the gas to the EU to be considered is building a pipeline which could connect those offshore gas fields to Turkey. This idea would be probably supported by EU, given their current interests in receiving most of the newest gas supplies passing through Turkey, of which existing infrastructure can be exploited. In addition, this could represent a profitable alternative both for Turkey and the Israeli-Cypriot joint venture, given that Turkey has been claimed as the cheapest alternative for exporting gas from that region[303]. Turkey alone could represent a unique costumer for these countries, as well as become their main export route, according to the fact that Ankara is heavily dependent on natural gas importations. The country could be open to new alternatives, considering that those new supplies could satisfy its necessity to lower gas bill through diversifying the sources. According to this, although it could be initially less profitable than sending it directly to the EU, to transport natural gas from the Levantine[302] basin to Turkey, could represent for the least an economic sustainable idea. This gas

could enter the country from the already equipped (for oil) terminal in Ceyhan[306] and later connected to the BOTAS[307] transmission system, provided that an implementation of the system is contemplated in order to support seasonal (or other) full capacity activities[287]. The entering of the "Southern Corridor" for these newest supplies, and particularly through the Turkish TANAP pipeline, is what the EU hopes. Besides, it represents Israel, Cyprus and Turkey fulfillment of the implementation of their poor exportation routes for the firsts, and the acquisition of another supply channel for the second. With these circumstances, the capacity will not represent a problematic issue, given that by 2023 the "Corridor" is supposed to reach 24 bcm[308]. In this context it is expectable that being an Azeri close partner could accelerate the approach, even considering the possibility to include Israel and Cyprus to the exclusion of the EU's "third party access", seeing the suspension of the principle granted for "Socar" in the "Southern Corridor"[309]. Indeed, Israel is one of Azerbaijan's top trading partners: Israel is supplying oil to Azerbaijan in charge of military equipment and additionally, "Socar" has recently operated in one of the Israeli offshore oil field[287]. The recent acquisition of the Greek "Desfa" of the Azeri "Socar", demonstrate that large part of the "Southern Corridor" is in the Azeri's hands, thing that could permit to Israel (and Cyprus) to penetrate, with their own gas production, the EU's most ambitious gas project.

In this context some geopolitical implications should be taken into account anyway. For instance, Turkey-Israeli relations have deteriorated long time ago, when in 2010 the Mavi Marmara[310] raid took place, killing nine Turkish activists. After US efforts to mitigate the question, Israel has publically made its apologies when President Obama visited Israel in 2013. A huge breakthrough was shown by the activity of many Turkish firms studying the feasibility and meeting with explorers of the region. But suddenly, the operation "Protective Edge", launched by the Israeli forces in summer 2014 against the Palestinian in the Gaza Strike, has completely overturn the situation: president Erdoğan and the Turkish energy minister Yildiz has announced that the normalization of Israeli-Turkish relations was not possible until the Gaza question is not ended. In this context, it seems quite clear that the Turkey-Israel pipeline question cannot be considered as a reliable prospect in the short term without any political approach.

[306] Ceyhan is the city in which the oil pipeline Baku-Tblisi-Ceyhan - http://en.wikipedia.org/wiki/Baku%E2%80%93Tbilisi%E2%80%93Ceyhan_pipeline

[307] The main oil and natural gas Turkish state-controlled company - http://www.botas.gov.tr/defaultEN.asp

[308] And 31 bcm by 2026 – http://en.wikipedia.org/wiki/Trans-Anatolian_gas_pipeline#Capacity

[309] Demostene Floros. South Stream and TAP: Working to Double Standards? – naturalgaseurope.com - http://www.naturalgaseurope.com/gazprom-south-stream-tap-socar-double-standards

[310] Ships with humanitarian intents had departed from Cyprus during the Israeli-Palestinian conflict in 2010. Nine Turkish people died after an helicopters raid -http://en.wikipedia.org/wiki/Gaza_flotilla_raid#Mavi_Marmara_boarding

Turkey's problems with Cyprus are even more complicated. Ankara and the Republic of Cyprus are on a dispute after Cypriot Republic foundation in 1960. Part of the island has been annexed by Greece in 1974[311] after Turkish invasion, while the other half has been declared to be the Turkish Republic of Northern Cyprus in 1983[312], even though it is recognized only by Ankara. As Elif Burcu Günaydin reported in his "Turkey's Potential Role in the Emerging South Eastern Mediterranean Corridor": "the offshore gas exploration [made by Greek Cypriot in the island] complicated the conflict further as it aggravated the sovereignty discussion over the sea"[313]. Every move made by the Greek Cypriots has been contested by Turkey, stating that Ankara will not allow any activity in energy field in that area. Consequently, all brought the situation to a complete block from both sides, until a permanent solution will be found. Only an agreement signed by Turkey and the Turkey Republic of North Cyprus is at the moment permitting the "Turkish Petroleum Company" (TPAO)[314] to make offshore exploration within Cyprus's territories. However, large re-consideration by both governments must be made in order to seriously consider the possibility to develop a Cypriot-Turkey pipeline, which would represent the only economic viable alternative for the Cypriot gas exportation as many experts report[313]. In this view, the "Aphrodite gas field", located in the southern coast of Cyprus, is prospected to contain more than 200 bmc of natural gas which, if only partly exported, could represent a huge amount for both European gas markets via Turkey, and for the benefit of the Republic of Cyprus's economy. What is now to be considered, given that Turkey remains the main gas-carrier candidate that act as a bridge for the south-east European future gas supplies, is that huge efforts from the international relations side and the foreign policy ground which have to be undertaken in order to solve those political fractures.

Some signs of a change have emerged lately, even though excluding the Turkish options. A set of initiatives in fact have shed more lights on a possible axis in the East-Med gas context, involving Bulgaria, Greece, Cyprus and Israel[315]. In this scenario a possible adherence of Cypriot and Israeli gas into the proposed "Interconnector Greece-Bulgaria"[316], that will be an additional linkage of the already constructed and completed in 2007 "Interconnector Turkey-Greece"[317], can be considered.

[311] Republic of Cyprus - http://www.presidency.gov.cy/presidency/presidency.nsf/dmlindex_en/dmlindex_en?OpenDocument
[312] Northern Republic of Cyprus - http://en.wikipedia.org/wiki/Northern_Cyprus
[313] Elif Burcu Günaydın. Turkey's Potential Role in the Emerging South-Eastern Mediterranean Energy Corridor, Istituto Affari Internazionali, Working Papers, March 2014, IAI, Rome
[314] TPAO is the Turkey's national oil company – tpao.gov.tr - http://www.tpao.gov.tr/eng/
[315] Natural Gas Europe. Increased Activity in the East-Med Gas Sector, September 15th 2014 – neturalgaseurope.com - http://www.naturalgaseurope.com/east-med-gas-sector
[316] IGB - http://en.wikipedia.org/wiki/Gas_Interconnector_Greece-Bulgaria
[317] ITG - http://en.wikipedia.org/wiki/Interconnector_Turkey%E2%80%93Greece%E2%80%93Italy

Besides, the Israeli side has shown its interest to support the former president of the hydrocarbon agency of Cyprus, Charles Ellinas, who marked during the "Second East Mediterranean Conference", in March 2014, the possibility to construct an "East Mediterranean Gas Pipeline" which would connect Israel to the Balkans, passing to the Cypriot gas terminals. In overall it has also to be pointed out that Israel has recently struck a long-term deal[318] with Jordan for the export of gas, worth 15 billion dollars, and that simultaneously Cyprus has signed a "Memorandum of Understanding" (MOU) with Amman particularly focused on natural gas trade[319]. In addition, to underline the recent economic and political turmoil in the area, Israel's Energy Minister Silvan Shalom stressed on the importance of the "East-Med Pipeline" and highlighted Israel's intention to go on with the project, during an event hosted by the Italian EU presidency on November 2014[320].
In this political framework all seem letting the international community open doors for a cooperative relations in order to concretely connect south-east Mediterranean states and Europe, even though it is not still clear which direction the Israeli-Cypriot gas will take. In any case, the possibility to direct the gas toward the Turkey territory keep standing in the table, in a moment in which the region is going through the continuous terrorism menace, civil wars and political upheaval[321], as its closeness with Syria and Iraq prove.

4.2 A long-standing relations with North Africa

In this context, the scenario is wide open to possibly welcome other EU long-standing partners in the North Africa region. Political stability and huge financial inflows for those North African countries as well as energy security for most of southern European countries, could impose the EU to include the possibility of enlarging the natural gas market to the southern Mediterranean area, or implement those already existing energy relations. The five North African countries in 2012 have consumed 95 bcm of natural gas in comparison to 155 bcm of total production, meaning that huge amounts can be directed, if well-supported by financing and infrastructures, to other markets. As a

[318] Merissa Newman. Israel signs $15 billion gas deal with Jordan, article on "The Time of Israel", September 3rd 2014 - http://www.timesofisrael.com/israel-signs-15-billion-gas-deal-with-jordan/
[319] Ansa Med. Energy: Cyprus and Jordan sign a Memorandum of Understanding, September 10th 2014 - http://www.ansamed.info/ansamed/en/news/sections/energy/2014/09/10/energy-cyprus-and-jordan-sign-a-memorandum-of-understanding_91befedb-c916-4921-8e86-44b84eb2780c.html
[320] Natural Gas Europe. Israel Proposes An East Med Gas Pipeline. 24th November 2014 – naturalgaseurope.com - http://www.naturalgaseurope.com/israel-proposed-an-east-med-pipeline
[321] Natural Gas Europe. Increased activity in the East Med sector. 15th September 2014. – naturalgaseurope.com - http://www.naturalgaseurope.com/east-med-gas-sector

consequence, those energy needy neighbors regions, like Europe, represent the main route for those North African nations. A huge division in term of energy importations and producing countries highlight which are energy-rich or poor countries. In this view, Algeria, Egyptian and Libyan rates are significantly higher compared to Morocco and Tunisia[322]. It might be pinpointed additionally that main producing countries depends on domestic fossil fuels. For Algeria, natural gas is the primary source for electricity production, in which two-third of the existing power stations are gas-fired, suggesting that not only one energy sector is linked to fossil fuels[322]. This situation is similar for Egypt, in which natural gas contributes to 76% of the country's total installed capacity, leaving to crude oil only the 10%[323]. On the other side, Morocco and Tunisia's situation is the opposite. Coal-fired plants are providing for around 50% of electric generation, while renewable sources represent fundamental elements for those countries' energy sector, one-third of the Morocco's energy production for instance. Moreover, a large market share is Morocco electricity importations from Spain through offshore links across Gibraltar[323]. On the Tunisian side, the primary source of electricity generation is natural gas, which occupy 90% of the market and it is mostly imported from Algeria[324]. In this case, renewable and crude oil do not represent any relevant data but, instead, they contribute to show how much the country has invested on natural gas rather than in other fossil fuel resources. Besides, the value of North Africa resources in the intra-exchange trade is limited, compared to the region consumption trends: Algeria is the only large supplier nation, exporting however limited amount of natural gas to Morocco and Tunisia (0,6 and 2 bcm respectively), while other sources are irrelevant[325]. In this context, it is necessary to underline that part of Algerian natural gas production is also exported to Italy, Spain and Portugal, passing before to Tunisia and Morocco in a transit free area. The situation for Egypt is instead completely different: it is basically disconnected to other countries in the region, mostly for the fact that it owns significant hydrocarbons reserves, which permit it to rely on domestic production.

[322] Energy International Agency (EIA). North Africa, cit. US Central Intelligence Agency (CIA). The World Factbook - https://www.cia.gov/library/publications/the-world-factbook/

[323] Silvia Colombo and Nicolò Sartori. Rethinking EU Energy Policies Towards the Southern Mediterranean Region. Istituto Affari Internazionali, IAI, November 2014, Rome.

[324] Manfred Hafner, Simone Tagliapietra and El Habib El Andaloussi. "Outlook for Electricity and Renewable Energy in Southern and Eastern Mediterranean Countries", in MEDPRO technical Reports, n. 16, October 2012.

[325] 2005 data reveal that 36 b/d (barrels per day) of oil were exported – Mustapha K. Faid. "The importance of energy issues in intra-Maghreb relations and in the relationships between the Maghreb and Europe", in Building Trust can Take the Form of Investment: Energy and Regional Integration in the Western Mediterranean, Barcelona, CIDOB, October 2010, pp. 45-61.

However, despite positive past trends as seen, today's situation is changed, especially for fossil fuels. In the natural gas case, growing consumption and stagnating production are forcing Egypt to import gas from Israel, once one of its main export markets[322].

From a European standpoint, North African states represent most of its crucial energy suppliers, especially in fossil fuels procurement. The oil and gas sector is in fact at the core of European importation activity from South East Mediterranean. In this context electricity deliveries, mostly between Morocco and Spain, complete the scheme. Algeria and Libya are the main hydrocarbon suppliers for the Mediterranean countries of the EU. In 2013, Algeria exported to Europe almost 35 bcm of gas, 45% of its domestic production and 13% of EU gas imports[323]. Transportation infrastructures play a central role: Spain is connected with two pipelines with Algeria, the "Maghreb-Europe pipeline"[326] and the "Medgaz pipeline"[327]. Italy is linked with Algeria gas fields through the "Transmed pipeline"[328] which, passing through Tunisia, contributes to create strong interdependence between producing, transit and consumer's countries[329]. In this view in fact, large European investments, as Italian ENI activity in Algeria demonstrates, contribute from one side to ensure Italy gas supply security but, from the other, to support local consumption and North African state's energy ground stability.

Fig. 2 – North African natural gas pipelines to Europe

Source: International Energy Agency (IEA) – (yellow: Maghreb-Europe; Blue: Medgaz; purple: Trans-Med – orange: Galsi (just planned); green: Greenstream (not from North African states)

[326] MEG; also known as the Pedro Duran Farell pipeline - http://en.wikipedia.org/wiki/Maghreb%E2%80%93Europe_Gas_Pipeline
[327] Medgaz - http://en.wikipedia.org/wiki/Medgaz
[328] Trans Mediterranean Pipeline also known as Enrico Mattei pipeline - http://it.wikipedia.org/wiki/Transmed
[329] EIA, Algeria Country Report - http://www.eia.gov/countries/cab.cfm?fips=AG

Differently, Libya is not a major player in terms of natural gas (3% of EU gas imports), rather it mainly exports crude oil to most of the European Mediterranean countries, such as France, Italy and Spain, for almost 850000 b/d[330], absorbing 40% of its exports[331]. What to underline in this case is that the country however remain a crucial player for Italy gas imports, exporting to it 9 bcm per year, 10% of the Italian total consumption[332]. In the Egyptian case, although a relevant oil and gas production had been long characterizing the country, since 2013 the capacity has started to reduce due to growing domestic demand and causing a significant supply drop to the EU markets[332]. To conclude, if from one side European Mediterranean states commit to North African countries only a small slice of their oil and gas importation mix (15% of whole importations), from the other, Northern African nations completely rely on exportation toward Mediterranean European countries, in a moment in which North African domestic consumption is increasing and intra-states energy exchange is limited. This surely could represent a problem for the region if implementations in exploring and extraction activity and a well-planned energy policy, including regional cooperative relations, will be not soon developed. Nonetheless, those North African states represent a crucial energy partner for Southern European nations, like Italy and Spain.

In this view, the EU has actively participated, from one side, with its largest energy companies activities in those areas, form the other, cooperation initiatives in order to engage concrete relationships between the EU and the south-east Mediterranean region have been made. In 1995 it has been launched the "Euro-Mediterranean Partnership" (EMP)[333], with the intent to develop a multilateral approach toward North Africa. In 2008, with the "Paris Summit", the Euro-Mediterranean initiative was re-launched, including energy cooperation as a central issue of intergovernmental relations framework[334]. This broad of initiatives should be considered as simultaneous actions with the "European Neighborhood Policy"[335] (ENP), as reported in chapter two, which has the intent to promote cooperation between EU and single Mediterranean countries. Bilateral action plans have been signed with Egypt, Morocco and Tunisia, although these documents display more an outline of wish, than proper measures to ensure the practical

[330] Barrels per day (edn)
[331] EIA. Libya Country Report - http://www.eia.gov/countries/cab.cfm?fips=LY
[332] BP. Statistical Review of World Energy 2013
[333] EUROMED also known as the "Barcelona Process" – europe.eu - http://ec.europa.eu/trade/policy/countries-and-regions/regions/euro-mediterranean-partnership/
[334] In particular a Mediterranean Solar Plan (MSP) that proposed to develop clean energy among Mediterranean states was developed (edn) – Europe.eu - http://ec.europa.eu/energy/international/international_cooperation/doc/2010_02_10_mediterranean_solar_plan_strategy_paper.pdf
[335] European Commission – europe.eu - http://eeas.europa.eu/enp/index_en.htm

implementation of concrete dynamics in the energy fields. Other few initiatives deserve to be pointed out, which include the "Association of Mediterranean Energy Regulators" (MedReg)[336] in 2006, followed by the establishment of the "Med-TSO"[337], the platform established in order to coordinate the activities of the Mediterranean "Transmission System Operators"[338], accordingly with the European plan towards a unified and cooperative energy ground.

In the south east Mediterranean region what certainly can affect the concrete development of a focused policy, in order to permit those states to support the EU gas market needs, have to do with political issues from both global and domestic factors. Surely, the "Arab Spring"[339] of 2011 has changed the set of opportunities in the previous *status quo* of Euro-Mediterranean relations, particularly concerning the energy field. The large dialogue existing has been affected by social, political and, as a consequence, economic features after that period of social turmoil. The situation in the energy market has indirectly been shocked to the tumultuous era the region was going through. Social discontent has showed its results, due to youth unemployment or government instability which also influenced the economic grounds, including the energy sector[340]. All this, added to a fast demographic growth and urban expansion, altered significantly the energy longing of the region. Some scholars' projections demonstrate that south Mediterranean energy demand will increase 70% by 2020, 91% of which is occupied by fossil fuel[341]. This means that probably the dependence on energy imports for this regions could increase, affecting from one side the fiscal balance[342] and, from the other, their possibility to improve their position as exporters, due to necessity to allocate energy resources to the rising domestic consumption. Low energy efficiency due to scarce existing infrastructures (and civil war in other cases), brought the region to drastic energy cuts and blackouts. Simultaneously, a low price policy driven by a large subsidies program, made the situation worse, increasing states' fragility. These last moves surely pose heavy burdens on already uncertain state budget, not permitting at the same time to act with investments in the

[336] MegReg – megred-regulatros.org - http://www.medreg-regulators.org/

[337] Med-TSO – med-tso.com - http://www.med-tso.com/ - and Europe.eu - http://setis.ec.europa.eu/newsroom-items-folder/european-commissions-launches-med-tso-to-boost-mediterranean-electricity-systems-2

[338] Mediterranean Transmission System Operators, 2012, Rome – europe.eu - http://ec.europa.eu/energy/international/doc/20120504_med-tso_conference.pdf

[339] Is a revolutionary wave of demonstrations and protests (both non-violent and violent), riots, and civil wars in the Arab world that began on 18 December 2010 and spread throughout the countries of the Arab League and surroundings - http://en.wikipedia.org/wiki/Arab_Spring

[340] George Gronewold, Joop de Beer. Population Scenarios and Policy Implications for Southern Mediterranean Countries, 2010-2050, in MEDPRO Policy Papers n. 5, March 2013.

[341] Emmanuel Bergasse. The Relationship between Energy and Socio-Economic Development in the Southern and Eastern Mediterranean, in MEDPRO Technical Report n. 27, February 2013.

[342] Amount of money government has from tax revenue and the proceeds of assets sold, minus any government spending. When the balance is negative, the government has a fiscal deficit. When the balance is positive, the government has a fiscal surplus - http://www.businessdictionary.com/definition/fiscal-balance.html

energy sector. These broad of events have completely changed south-east Mediterranean states approach over their international participation in the energy sector, passing from a position of reliable exporters to become few uncertain actors. Energy trends[343] highlight fundamental structural challenges to face in this post-Arab Spring phase: the difference will be made by how those nations can manage energy issues in a moment of economic uncertainty, reflected on the pattern of their relations with their external partners, including the EU.

From the south east Mediterranean regions standpoint, the growing fragmentation of states' unity, mainly due to those nations uprisings period, makes regional cooperation and integration a hard challenge. Those problems certainly have also involved the energy sector, in a moment in which most of the projects for developing systems' integration and interconnection have been momentarily put aside. Despite assistance among those states still take place, in addition to the support to European's energy field they currently give, as well as the large possibilities to implement the cooperation process among those areas can change future perspectives, political instability seems to have accentuated division between secular and Islamist forces. However, the pending risk of major interruptions in the supply of Russian gas to Europe or instead, as seen previously, the sudden abandon of large pipelines projects[344], make the prospects for re-launching EU-North Africa energy cooperation even more appealing or, in some cases, urgent. In this context, additionally, the "Observatoire Méditerranéen de l'Energie"[345] reports that North African states fossil fuels domestic demand, in the period 2011-2030, will increase from 335 Mtoe[346] to 660 Mtoe; all this has to deal with an energy inefficiency degree that unlikely could support this 100% growth any longer. This means that for North African countries, in 2030 fossil fuels will contribute to more than 80% of the total electricity generation for instance[345]. This moment is representing a transitional phase for those countries, confirming that those difficulties they are facing are strictly connected with governmental policies, which are now directed to sustain internal consumes through domestic policy initiatives, limiting regional or international exportation. However, on the other hand, to direct concrete policies towards increase energy efficiency can be possible only if revenues obtained by exporting fossil fuels will be made. However, expanding the use of fossil fuels to encounter growing energy demand could produce destabilizing effects. In fact, to focus the production for domestic heat or

[343] Compiled by the International Energy Agency (IEA)

[344] Even though driven by particular international relations issues or regional and community policies in conflict – Ex. the EU "non-discriminatory legislation", included in the Third Energy Package, which does not permit Russia to continue the South Stream development (edn)

[345] OME - Mediterranean Energy Perspectives 2011 - http://www.dimed.gouv.fr/sites/dimed.gouv.fr/files/ome_-_mediterranean_energy_perspectives_-_novembre_2011.pdf

[346] Million tons of oil equivalent (edn)

electricity generation, could determine a contraction of the exportation and the resulted reduction of the energy revenues collected by governments. Nonetheless, investments in plants or interconnections and a right economic policy, in terms of rebalance subsidies, too high and unsustainable for the governments, represent a possible way to try solving the energy inefficiency the region is going through, as well as create an adequate ground for exportations.

Besides, in the case of non-producing countries, like Egypt, Morocco or Tunisia, increasing fossil fuels importations from regional neighbors can cause negative effects on the balance of payments and on the sustainability of public finances. As it can be easily understood, financial actions determine a necessary breakthrough in those countries' energy policies, which can include exportation on the EU territory as one of the main goals to solve economic uncertainty, as well as welcoming EU's energy companies investments in order to develop the energy sector, where favorable political condition permit it. To complicate matters, if North African growing consumption will be not accompanied by significant efforts to expand the existing oil and gas pipelines capacity, future possible EU's increasing fossil fuels supplies needs could put in risk also the sustainability of current European importations from that area, caused by those states' infrastructures inefficiency. However, considering that EU's fossil fuels demand is not expected to grow drastically in the years to come, what is anyway in risk is North African's long-standing role of oil and gas exporter to the European countries and especially for Southern Europe. North African countries need new and solid transportation infrastructures, improving technology and political reliability, which both can support national consumption and exportation activity. In this vision, EU financial initiatives which include FDI, public or private, technology transfer and projects at national and regional levels to stimulate the stabilization of energy efficiency could be a rationale method which contributes to increase south-east Mediterranean states relevance as international economic actors. For instance, as Europe is trying to do, a diversification policy for the energy acquisition can be useful to satisfy the margins created by the increasing of domestic energy demand and to enable them to generate surplus to destine in exportations. From the jurisdictional side, EU focused regulatory coordination, aimed promoting market liberalization, transparency, as well as stimulating energy market, could intervene as efficient means in order to balance the intergovernmental administration of the energy sector in the whole area. EU attempts to ensure enough supplies for its consumes could almost certainly take place by accessing to the producers side with capitals and investments, contributing as well to the development of a stable political and economic ground for the region.

4.3 The Middle East

Moving toward orient, is not to neglect the possibility to consider as future important partner also the Middle-East, not a current European gas supplier but with the interesting profile in the energy context. Iran, for instance, although its less than 30 tcm[347] yearly production, it's the world second country in proved gas reserves. Unfortunately, Iranian production in 2010 has stopped to 138 bcm, scarcely sufficient to satisfy the country's domestic demand, even though today's internal productions has reached more than 150 bcm. However, in terms of exportations, the Iranian production can concretely only reach the Turkish and the Armenian market[348]. Starting from these assumptions, what is astonishing is that the country needs to import 8 bcm of gas from Turkmenistan annually in order to cope the northern country's demand. Differently, the enormous quantity of Iranian's gas reserves is located in the southern part of the state, and particularly on the "South Pars"[349] offshore plant, in the Persian Gulf. This could represent a huge deal for who is supporting the idea of making the Iranian gas entering the "Southern Corridor". In fact, this concretely represents the most available alternative, considering the country's geographical position and its proximity with Azerbaijan and Turkey. These however remain only hypothesis at the moment, firstly considering that Iranian reserves are limited by UN sanctions, which also neglect financial investments towards national energy industry. In addition, considering that the majority of the gas fields are in the south, the most tempting market for Iran at the moment keep being the one of LNG (liquefied natural gas)[348]. In addition, Iran has recently inaugurated its first upstream gas projects, which will permit to 80 bcm of gas to be produced.

Europe anyway represents one of the main observer actors for the Iranian gas. For this reason EU is ready to include Iran into its main gas suppliers, and possibly via the "Southern Corridor", on the condition that political relations will calm down. Considering Iran's high costs for producing power, selling abroad gas or fuel oils can generate useful profits. To saying the truth, the Islamic Republic still continue to export electricity abroad but national thermal power plants efficiency, which represent the 82% of Iran's total power production, is only about 37%[350]. In the natural gas context, Iran has focused its activity on the "South Pars" since mid-2013, together with Qatar, it

[347] Trillion cubic meters (edn)

[348] Osservatorio di Politica Internazionale. Politica europea dell'energia: il Corridoio Sud, n. 56, June 2012, Istituto Affari Internazionali, IAI, Rome.

[349] South Pars and North Pars Gas Fields are together the world largest gas field. They mainly contain condensate natural gas, a mixture of various hydrocarbons liquids present in the gaseous components. The IEA has estimated they have 1800 trillion cubic meters of gas. - http://en.wikipedia.org/wiki/South_Pars_/_North_Dome_Gas-Condensate_field

[350] Natural Gas Europe. When and how can Iran deliver gas to EU?, December 1st 2014. – naturalgaseurope.com - http://www.naturalgaseurope.com/when-and-how-can-iran-deliver-gas-to-eu

provide for half of the Islamic Republic's gas production. This project, if completed as expected by 2016, would contribute to reach 1,1 bcm per year at the current production[350]. For the realization of the goal to connect Iranian gas fields with the EU, Western sanction should be eliminated in order to permit the state to make adequate financial efforts, even though the nuclear menace remain at stake. To support this possibility is the fact that Iran is already exporting a minimum quantity of gas to Turkey through the "Tabriz–Ankara pipeline"[351], which collects natural gas from the country's resource-poorest area in the north. In this context, if those supplies want to be directed to the "Southern Corridor", the need of infrastructures in order to implement them, 15 mcm[352] today, is clear. It has been planned by the parts (Turkey and Iran) that the final goal is to send 100 mcm[350] by 2020. These natural gas sources, if positive international relations will be undertaken between EU, Turkey and Iran, can possibly represent further amount for the TANAP pipeline. These could be added to possible supplementary amounts that would be sent by the Azeri Caspian basin and that certainly could help south-east Europe energy security.

Fig. 3 – Iran's fossil fuels reserves and pipelines

Source: Limes – Rivista Italiana di Geopolitica

[351] The Tabriz–Ankara pipeline is a 2,577-kilometres long natural gas pipeline, which runs from Tabriz in North-West Iran to Ankara in Turkey - http://en.wikipedia.org/wiki/Tabriz%E2%80%93Ankara_pipeline
[352] Million Cubic Meters (edn)

Furthermore, Iran's neighbors represent other options and additional future volumes for south-east Europe. Northern Iraq for instance, guided by the "Kurdistan Regional Government" and forming a semi-autonomous region, is eager to expand activities around its natural resources. Turkey, which represents its natural partner thanks to the state's geographical position, has signed with the KRG energy deals for exploration and transportation of hydrocarbons in the Kurdish territory. It generated "Genel-Enerji"[353], a Turkish-British joint venture which has already begun to export oil from the region to the Turkish Ceyhan port in the Mediterranean Sea, with the purpose of construct an additional pipeline planned to be completed in 2013. In terms of natural gas this northern region has a particular position for Ankara, but also represents a possible EU gas supplier. Some scholars suggest that the KRG's gas could be three times cheaper than the one Turkey is having from the Caspian region, Russia and Iran, due to its easy transportation and production[354]. In addition, in September 2013, the "Siyah Kalem Company"[354], a Turkish construction firm, acquired the license to import natural gas from north Iraq for 26 years, which means 10 bcm of gas per year to Ankara. Despite this, infrastructures are still inexistent, even though the construction of a pipeline with the purpose to carry from 4 to 20 bcm per year in the 2017-2020 period, has been discussed and approved lately[355]. Frictions with Baghdad central government are expectable, although Turkish latest efforts to establish good relations with it. At the same time, Ankara must not ignore the northern Iraq reserve of 2,8 tcm[356], considering the current Turkish attention toward energy importations in order to realize state's aspirations to become from a "gas bridge" to a "gas hub". Certainly those Kurdish reserves has the potential to become a game-changer in the Southern Corridor context, they in fact are four times larger than the Azeri's whole "Shah Deniz Field"[357].

Whether or not Northern Iraqi, Iranian or South-East Mediterranean supplies would enter the Corridor, most likely through Turkey, the capacity of TANAP and TAP will easily exceed, even in the case of only Azeri further injections. In this sense, all the operators involved in the project should create a scope for new infrastructures, additional parallel lines, or the Southern Corridor's

[353] Genel Energy plc is an Anglo-Turkish exploration and production company - Genel Energy plc is an Anglo-Turkish exploration and production company

[354] Olgu Okumus. "Turkey's Cross-Border Energy Policy's Tone Shifted", in Natural Gas Europe, 24 September 2013 – naturalgaseurope.com - http://www.naturalgaseurope.com/turkey-cross-border-energy-policys-tone-shifted

[355] Firat Kayakiran and Selcan Hacaoglu. "Genel to Produce Kurds' Gas as Turkey Said to Ready Pipeline", in Bloomberg, November 13th 2014 – Bloomberg.com - http://www.bloomberg.com/news/2014-11-13/genel-agrees-to-develop-kurdish-gas-fields-for-export-to-turkey.html

[356] Thousand Cubic Meters (edn)

[357] Fatih Özgür Yeni. Thinking Beyond TAP: Turkey's Role in the Southern Energy Corridor, IAI Working Paper, November 2013, Istituto Affari Internazionali, Rome.

capacity implementation, which are anyway planned for the coming decades whether European consumption will increase or not.

4.4 Spain

A last little chance is coming from west and it is not part of any African or Middle-East region, but rather it is integral part of the European Union. It is the Spanish case which, strategically well-positioned, represents a huge alternative to possible new European gas supplies. The country is optimally supplied of gas coming from North Africa[358] but, above all, it disposes of 7 LNG terminals from which gas could be sent to its Mediterranean neighbors like Italy. In case of huge Russian supplies limitations, sending natural gas, via pipeline or liquefied, to Germany, Sweden, Finland, Czech Republic will be possible. Besides, to compensate gas deficit with its LNG terminals, from which gas would be transported to France exploiting existing interconnections like the "Larrau"[359] one (5,2 bcm/y), can be surely contemplated. Spain could also send its natural gas resources to Holland, Belgium, Greece and also Turkey, in its liquefied form by boat. For this reason, the Spanish government is trying to put pressure over the EU in order to develop a new pipeline, "Midcat"[360], which, starting from Catalonia, has been defined by Madrid as a structure of "common interest". The planned capacity is around 7 bcm, with the final purpose to connect the Algerian "Hassi R'mel's" gas fields[361] with the core of the EU, using the Spanish pipeline network, mostly ignored by the community due to the preoccupation over European's eastern boarders. What to consider in this case is that Spanish LNG terminals are not working at full capacity, this could led the EU and the Spanish government to better exploit what Europe has already available, being understood that the "Midcat" is a project that should be concretely developed[362] and surely useful for the expansion of the European gas grid.

[358] "Maghreb" and "Medgaz" pipelines (edn)
[359] Is a natural gas interconnector from Spain to France ended in 2012 - http://www.ogj.com/articles/2008/12/france-spain-build-gas-interconnections-integrate-markets.html
[360] Instituto Español de Estudios Estratégicos (IEEE). El MIDCAT: el papel de España en la seguridad energética de Europa, April 2014, Documento Informativo - http://www.ieee.es/en/Galerias/fichero/docs_informativos/2014/DIEEEI07-2014_MIDCAT_MMHG.pdf
[361] is the largest gas field in Algeria and one of the largest gas fields in the world - http://en.wikipedia.org/wiki/Hassi_R%27Mel_gas_field
[362] Luca Pistone. Gas: se la Russia chiude i rubinetti, c'è pronta la Spagna, in Atlas, April 15th 2014 - http://atlasweb.it/2014/04/15/gas-se-la-russia-chiude-i-rubinetti-ce-pronta-la-spagna-579.html

Fig. 4 – The Spanish main gas pipelines and LNG terminals

Source: Oil and Gas Journal

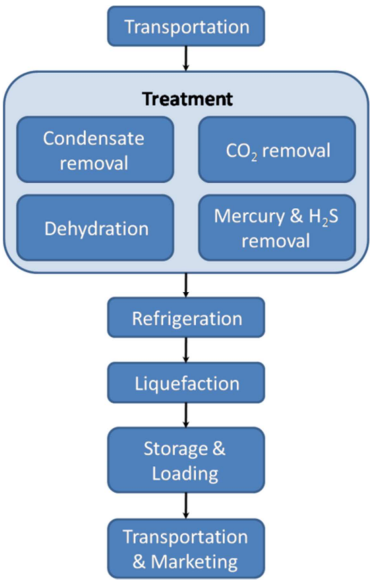
4.5 The LNG option

Moving towards other possible options, what to consider now is that diversification does not only mean to find out other diverse geographically-located actors in order to acquire natural gas. In another sense, to diversify also means to change the kind of the energy source, including as well farer regions supplies, from which it would be impossible to receive natural gas via pipeline. Is actually the case of the "Liquefied Natural Gas" (LNG), which is simply natural gas, most of the times composed around 90% of Methane and other parts of Butane and Ethane, converted into liquid through a liquefaction process. The choice has often fallen to LNG because more than 600 liters of natural gas are needed to make only 1 liter of LNG. This process make possible to transport large amount of natural gas on the long distances, by road transport or, most of the times, by ships. The liquefaction process is normally done in the producer countries, which takes place alternately to the compression and cooling of the methane, up to bring it to -161 °C[363], and then is normally stored in cryogenic tanks to keep at a low temperature for a long time[364]. The LNG supply chain is composed by various processes, including extraction, transportation (mostly by ships in this

[363] See also "LNG - the safe fuel" - https://www.youtube.com/watch?v=18jB74GtZwg
[364] Ham Italia. Gas Natural Liquefatto - http://www.hamitalia.com/cose_il_gnl.html

passage), storage in LNG terminal (often to the consumer/buyer country), then its road transportation and finally to the final consumer[365].

Fig. 5 – LNG Supply Chain



Source: Wikipedia

The advent of LNG has contributed to vary the importations flow in the world, and particularly in the last two decades. In some cases, as for the UK, when national gas reserves started to decline, accompanied by a growing domestic demand, many states have turned to import huge amounts of liquefied gas, also considering the facility to transport large compressed quantity of it.

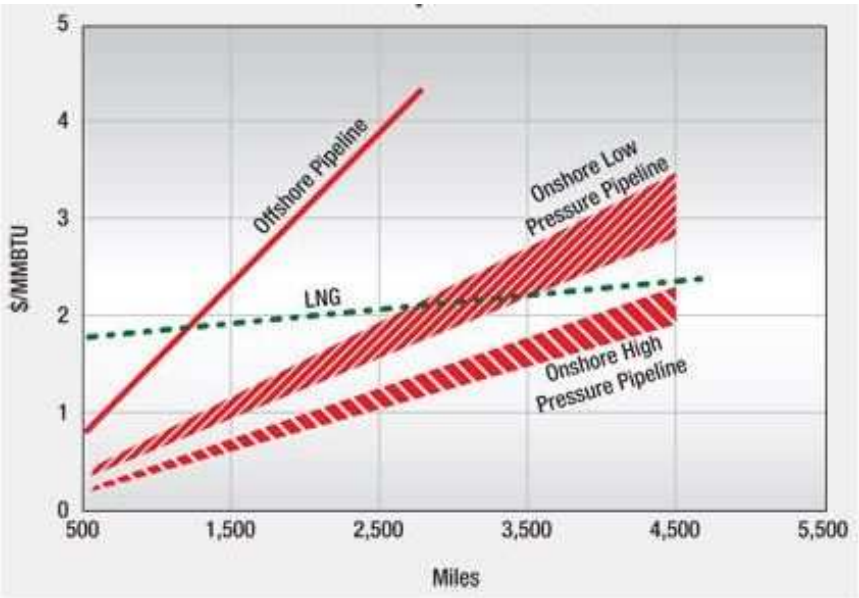
Liquefied Natural Gas plants minimize the entire costs if developed for being transported for long distances, in fact this source shipped via LNG carriers requires high costs of liquefaction and regasification, regardless distances or transportation costs[366]. Deductively, the transportation costs of LNG is more profitable if made for long distances, for shorter routes is in fact preferred the traditional pipeline[367].

[365] Ham Italia. Gas Natural Liquefatto - http://www.hamitalia.com/la_filiera_del_gnl.html

[366] James T. Jensen. Il commercio internazioanale e l'industria del GNL, in Treccani Enciclopedia - http://www.treccani.it/export/sites/default/Portale/sito/altre_aree/Tecnologia_e_Scienze_applicate/enciclopedia/italiano_vol_4/155-186_x2.5x_ita.pdf

[367] For more details see: Xun Yao Chen. Investing in liquefied natural gas carriers: The future of natural gas, article on "Market Realist", May 2014 - http://marketrealist.com/2014/05/working-overview-of-investing-in-lng-carriers-future-of-natural-gas/

Fig. 6 – Liquified Gas Transportation Costs



Source: ENI

This alternative market permitted to new actors, which disposed to large gas reserves but which had not previously entered the international energy market when oil became relevant, due to their oil-poor territories, to be included into the biggest gas producers in the world[368]. It permitted also to some African states to enter the world natural gas market, like Libya, which joined the market in 1971 thanks to its LNG supplies to Italy and Spain. If from one side this process supports the globalizing energy market development, from the other, some negative economic implications have to be taken into account. From an initial observation it might be noticed that a first problem is represented by the gas' low density: it implies higher storage and transportation costs compared to oil and carbon. In addition, high maintenance costs and rapid depletion of gas field require disposing of large reserves which significantly exceed the volume requested by the final consumer. Usually, final shipped volumes to the client are reduced for the complex production process, as well as for the "boil-off"[369] phenomenon and the gas used for the regasification.

However, starting from the 2000s, LNG markets have become global in particular thanks to large investments on domestic infrastructures and economic prosperity. Despite recent efforts on constructing new terminals and infrastructures in some of the south-east Europe's countries, taken

[368] Nations like Indonesia, Algeria, Malaysia and so on - http://en.wikipedia.org/wiki/Liquefied_natural_gas

[369] When higher temperatures affects cryogenically frozen gas in the vessels, vapours is forming and part of the gas is wasted (edn)

in its entirety, the EU region remains poor in plants which could concretely welcome this alternative. With the exception of Greece, the Balkan area lacks of LNG import facilities and cannot benefit from availability of cargoes at attractive prices. Differently, in other "Southern Corridor" passing countries, Turkey[370], Italy[371] and Greece has been started developing, for nearly a decade, a process of infrastructures implementation. This process seems to enable them to think to the possibility to go beyond the solely idea to construct a regional natural gas grid composed only by pipelines. Differently in fact they aim to create a solid gas infrastructures system which includes LNG in the set of tools needed to achieve an adequate degree of energy security.

In this context, "greenfield"[372] initiatives are needed in order to develop the concrete goal of fully diversifies gas supplies in the EU region. A central role is played by south-east European government and by the EU's institutions, the only two actors which could direct investments to concrete projects as well as private energy companies. Surely, an intensification of the planning process of interconnections construction and transportation routes is also needed in order to maximize the efficiency of the terminals[373].

Another relevant issue to consider in the LNG case is the role of contracts. In this sector producers and final clients are subjected to different regulation systems and, although traditional production plans of LNG are structured in order to well distribute risks among the parts, this sometimes complicate the matters[374]. More clearly, the widespread "take-or-pay" clause has been the most traditionally adopted and this could imply to respect rigid obligations for the parts. In this vision, starting from the assumption that a minimum level of supply[375] have to be transported in any case, the risks linked to capitals and producing investments is endorsed by the producer and, on the other side, the risk concerning prices fluctuation is endorsed by the buyer. In some cases, where take-or-pay contract were indexed on the oil prices, this method has favoured the producer for a long time, thanks to the frequent rise of the oil prices. But remarkably this tendency has recently changed,

[370] Ansa. Energia: La Turchia mira a diventare un hub del gas per l'Ue, October 2014 - http://www.ansa.it/web/notizie/canali/energiaeambiente/energietradizionali/2014/10/22/la-turchia-mira-a-diventare-un-hub-del-gas-per-lue_6156615c-aab7-4511-8bca-265de72f321a.html

[371] EcoSeven.Gas, quanti sono e dove si trovano i rigassificatori in Italia - http://www.ecoseven.net/energia/gas/rigassificatori-quanti-sono-in-italia-e-dove-si-trovano

[372] Is a kind of foreign investment starting from a new plants - http://en.wikipedia.org/wiki/Greenfield_project

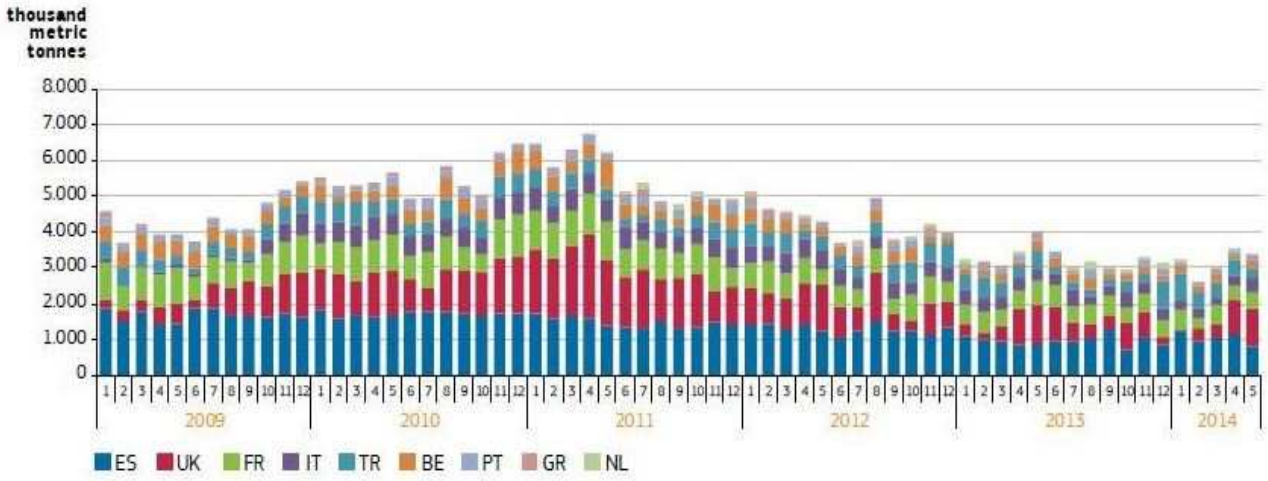
[373] Anastosios Giamouridis and Spiros Paleoyannis. Security of the Gas Supply in the South Eastern Europe, The Oxford Institute For Energy Studies, July 2011 - http://www.oxfordenergy.org/wpcms/wp-content/uploads/2011/07/NG_52.pdf

[374] Is enough to think about EU and non-EU legislation in terms of enviroment or in the case of the "Third Energy Package" (edn)

[375] 90% of the yearly supplies were usually intended as "take-or-pay" contracts.

thanks to oil price reduction. However, we have lately assisted to a conversion on "spot market"[376] prices in order to equally distribute risks and adapt contracts clauses on the recent economic trends[366]. The producers' preoccupations concern in fact the possibility that a too abrupt oil prices decrease could cause a reduction of natural gas prices even under the production break-even point[377]. LNG could represent anyway a solid method for supporting the natural gas pipeline networks considering that, although its high costs of maintenance and transportation, it gives more opportunities because extend at the global level the possibility for states and region to acquire natural gas without long political negotiations, but rather with simple bilateral trading actions.

Fig. 7 – European LNG Imports by Country



Source: European Commission

The figure above underlines how LNG imports to the EU began falling in the second quarter of 2011, continuing at a fast rate in 2012 and 2013. Effectively, in 2013 LNG imports were 24% below volumes in 2012 and below 42% peak volumes in 2011. Surely, an unexpected weak demand for gas in the EU, along with a growing demand of LNG in the rest of the world, correlated to the inflexibility of some European market caused by national long-terms contracts for pipeline with "take-or-pay" clauses, as seen in the previous chapters, could represent all of the reasons why the

[376] An exchange in which goods are delivered and payed immediatly and for the concrete amount bought (edn)
[377] In same cases, like for USA shale gas, too high production costs had initially forced investors to sell natural gas below costs (edn)

decreasing of LNG usage, and the consequent low level utilization of LNG terminals[378] in the EU territory[379] have took place.

4.6 The "Shale Revolution": an alternative for the EU?

Different, instead, is the case of other newer alternative sources which has hit the headlines recently, also traded at its liquid form. The rise of unconventional gases during the last decade represents the demonstration that a diversification approach has invested all the most industrialized countries. Some countries, not traditionally tied to natural gas production, have discovered new otherwise inaccessible sources thanks to technology evolution. In this context unconventional gases have become as much relevant in the international market as the long-established natural gas resources. "Unconventional" does not refer to the gas's chemical composition, but rather to the difficulty of its requirements, due to its atypical geological location. Usually, unconventional gas[380] is found in highly compact rocks or coalbeds and requires a specific set of production techniques[381] as well as large investments. The USA are the hugest example of this evolution, the shale gas innovation in fact has contributed, among other energy policies[382], to enable the state becoming recently and rapidly from a significant importer, into an almost self-sufficient gas producer. Simply, the shale gas is the methane contained between and inside certain kind of rocks[383]: the term shale gas is commonly used referring to a particular unconventional gas field, from which the gas is extracted, trapped in the microporosity of the rock.

[378] The total regasification capacity of the LNG terminals in Europe is about 200 bcm/year. The utlizationj rate of LNG terminals in the EU is currently around 25%. – European Commission - http://ec.europa.eu/energy/observatory/gas/doc/201410_q3-4_quaterly_report_gas_market.pdf

[379] European Commission, Market Observatory for Energy. Quarterly Report on European Gas Markets, Volumes 6 and 7, 2014 - http://ec.europa.eu/energy/observatory/gas/doc/201410_q3-4_quaterly_report_gas_market.pdf

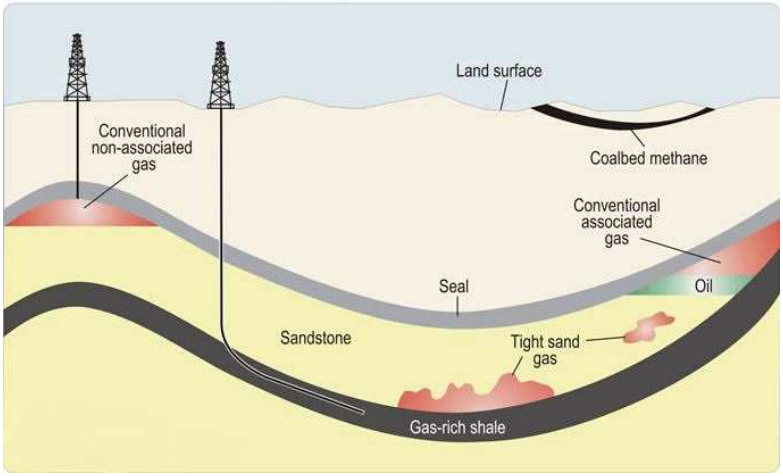
[380] Among recent rekonized as "unconventional gas" there are shale gas, tight gas and coal bed methane (edn)

[381] Total.com. Why is it called unconventional gas? - http://www.total.com/en/energies-expertise/oil-gas/exploration-production/strategic-sectors/unconventional-gas/why-it-called-unconventional-gas?%FFbw=kludge1%FF

[382] Such as the turn into being self-sufficiency oil producer and exporter and large natural gas reserves owner (edn)

[383] More technically is the gas extracted from gas field composed by clays partially diagenizzate, derived from anaerobic decomposition of organic matter contained in clays during diagenesis - http://it.wikipedia.org/wiki/Gas_da_argille

Fig. 8 – Unconventional shale gas location



Source: U.S. Energy Information Administration

Despite China is the country with the largest reserves in the world, this business has attracted firstly the USA, disposing of large investments capacity and research activity, which enabled them to become a pioneer of this source exploitation. It might be considered in this sense, that Wall Street large investments have had a crucial role, allowing so large energy companies to develop this innovative process. US energy independence in fact, has become a central issue in the American recent bulls and bears economy, bringing financial dynamics in the gas field. What instead has not been clearly demonstrated is the fact that this activity requires large economic efforts but also environmental expenditure. From one side, for each gas field, 30 or 40 million liters of water are injected by a high pressure producer in order to extract the gas from rocks[384]. From the other, as former ENI director and today's close associate of President Obama's administration, Leonardo Maugeri suggests, a shale gas field has deplete its productivity in just one year and for this reason, an high intensity of perforation in the same area is needed in order to support costs[385]. In fact, to construct and launch a shale gas field cost from 4 to 6 billion dollars, against 800.000 dollars of a traditional natural gas field.

At this, it might be added the fact that possible and demonstrated negative effects on the environment, and consequently on the population living the "shale area", have took place. Despite the initial enthusiasm that invested all the landowners, keen to rent their plot, thinking that loyalties derived could have been a profitable choice, further evolutions have shown "shale revolution's"

[384] Roberto Pozzan. Lo shale gas è un'alternativa o una bolla?, in Il Corriere della Sera, March 27th 2014 - http://www.corriere.it/inchieste/reportime/economia/shale-gas-alternativa-o-bolla/28e2eca0-b5d6-11e3-88c9-f5f1afba752a.shtml

[385] Roberto Pozzan. Shale Caos, in Report, May 12th 2014, report.rai.it - http://www.report.rai.it/dl/Report/puntata/ContentItem-dbe5e600-c50c-4673-89d6-451aeb09c011.html

problematic developments. Effectively, environmental problems including water pollution derived from chemical liquids injected in the ground and the not excluded possibility that "fracking", this is term to explain the extraction activity, could cause earthquakes, have been discussed[386]. In addition, taking into account the American case, which is the unique well-developed and still working example, the fracking activity did not fulfilled the expectations to create more jobs, surely because of its low manufacturing necessity[385]. Finally, the reason for increasing shale gas activity is technological developments and governmental subsidies obtaining. As well as volatile gas prices since 2000[387] and the facility of credit availability, as in the case of Wall Street large investors, apparently the one who possibly earn in terms of fees from this business, have contributed to its expansion.

Other relevant data suggest that the growing importance of shale gas is supported by the 55,08 tcm of unconventional gas total potential resources, of which shale gas accounts more than 18 tcm[388], compared to estimated conventional gas resources of 26 tcm[389]. What to consider, as said, is also exploration, extraction and distribution costs as well as the environmental impact of the fracking activity. For sure, the choice fell on unconventional gas due to the beginning of the decline of North American conventional proven gas reserves, accompanied by the discovery of many unconventional gas deposits[387]. In economic terms, unconventional gas resources have been not really exploited until gas prices increased in 1999, reflecting constriction of US gas market. On those circumstances, the rise of gas prices enabled unconventional gas exploitation to become profitable and sustainable. Recent developments have shown that the shale gas has reduced total costs of almost 40% since the so called "shale revolution" has started in 2010. The huge development of know-how and R&D has enabled American energy operators to rearrange fracking compared to costs in favour of productivity and profitability. An example is the "Marcellus"[390] shale gas field in which has been reported an increasing production of 6 times more than the period before 2010-2014[391].

[386] Ken Silverstein. Shale Oil And Gas: Potential For Earthquakes Could Cause Sector To Lose Footing, in Forbes, June 6th 2014 - http://www.forbes.com/sites/kensilverstein/2014/05/06/shale-oil-and-gas-potential-for-earthquakes-could-cause-sector-to-lose-footing/

[387] Florence Gény. Can Unconventional Gas be a Game Changer in European Gas Markets?, The Oxford Institute for Energy Studies, NG46, December 2010.

[388] Colorado School of Mines. Potential gas Committee reports unprecedented increase in magnitude of U:S. natural gas resource base - http://www.mines.edu/Potential-Gas-Committee-reports-unprecedented-increase-in-magnitude-of-U.S.-natural-gas-resource-base

[389] Advanced Resource International (ARI). Paradigm Shift in domestic natural gas resources, supplies and costs, September 2009 - http://www.adv-res.com/pdf/Kuuskraa%20EFI%20Natural%20Gas%20SEP_21_09.pdf

[390] Marcellus shale gas trend - http://en.wikipedia.org/wiki/Marcellus_natural_gas_trend

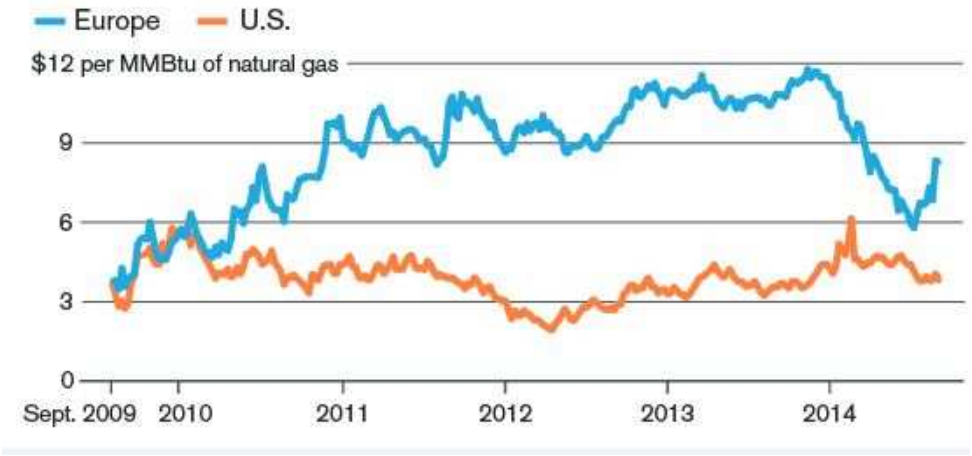
[391] Leonardo Maugeri. Se gli USA resistono al ribasso, in Il Sole 24 Ore, December 2nd 2014

However, if from one side American production is bearing its fruits only many years after its initial exploitation, showing that the business will possibly not remain only speculative bubble. From the other, it is quite clear that in Europe, unless this gas would not be imported[392], could not be introduced. Firstly, starting from the assumption that fracking has caused preoccupation over its environmental impact, in terms of water and atmospheric pollution as well as earthquake origin, to develop a shale gas industry in Europe looks quite unrealistic due to its population density and geological conformation. Fracking is an invasive and noisy activity, incompatible with the European territory and, as a report of the "United States House of Representatives Committee on Energy and Commerce"[393] suggests on the presence of chemicals in fracking, harmful substances are used during this activity, although most of them covered by industrial secrecy. Besides, political and industrial competence in the field is non-existent, on the contrary, the US government dispose of an Energy Department which is absent in the EU member state composition[385]. From the firms' side, at least 4-5 years from the start-up date are needed in order to make possible a fully working activity[387]. To conclude, the development of an European shale gas revolution remain strictly linked to the possibility of importing it from the USA. American gas imports have dropped leaving the field free to the increasing LNG exporting activity towards European and Asian markets. LNG is the only way for US to transfer conventional and unconventional gases, considering that a transatlantic pipeline is unrealistic. The problem in this sense now lie on the fact that there is a scarce presence of liquefaction terminals in the American territory where fracking is taking place, making difficult to convert gas into its liquefied form in order to be transported. In addition, it is necessary to consider that gas prices from US and Europe are hugely different: American natural gas prices are around half of the European ones.

[392] And this seems to be the intent of Obama administration foreign policy (edn) – see also,
Paolo Mastrolilli. A Roma è il giorno di Obama Riforme, Ucraina e shale gas prima del tour privato al Colosseo, in La Stampa, March 27th 2014 - http://www.lastampa.it/2014/03/27/esteri/a-roma-il-giorno-di-obama-riforme-ucraina-e-shale-gas-prima-del-tour-privato-al-colosseo-FBJY8uBoF81HrR6V5umREL/pagina.html

[393] It has been established that around 750 chemical liquid are injected in fracking activity - United States House of Representatives Committee on Energy and Commerce. Chemical Used in Hydraulic Fracturing, April 2011 - http://democrats.energycommerce.house.gov/sites/default/files/documents/Hydraulic-Fracturing-Chemicals-2011-4-18.pdf

Fig. 9 – Comparing Gas Prices Europe/USA



Source: Bloomberg

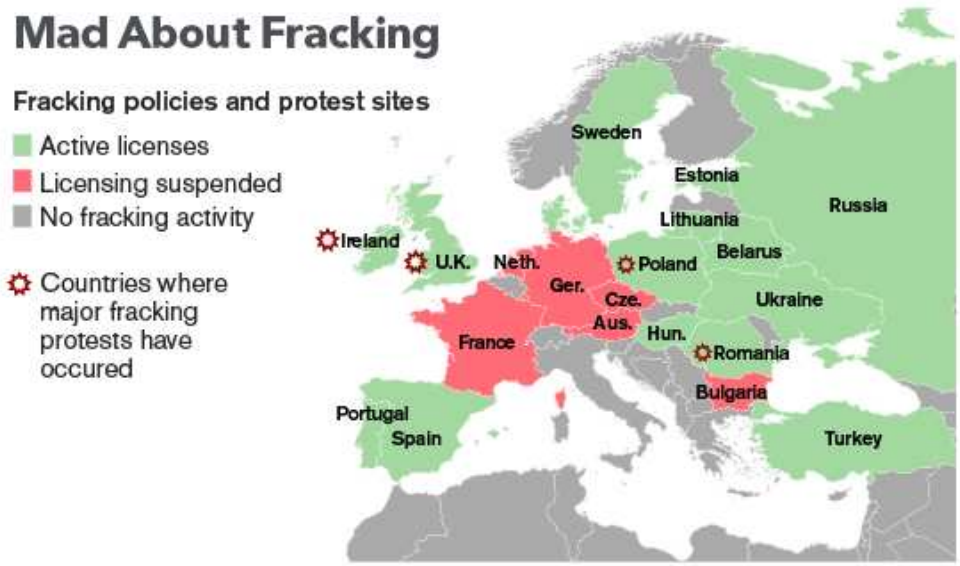
For long time, in order to support shale gas trade, the gas production resulted by fracking has been sold below costs in the American energy market. Considering this, without government subsidies and external financing, the business could possibly not stand alone in the future. In this context would be interesting having a look to the evolution of future US shale gas production and if, as sustained by some experts[391], increasing production due to know-how and technology acquisition, could imply a minor impact on fracking costs.

To conclude, indirect implication can invest south-east Europe countries, which could benefit of the possibility to import unconventional gas from the USA enlarging its energy sources availability. What to say is that all the European efforts of importing US-invented shale gas activity in the European territory has been concluded as a failure[394], and sometimes with the EU intervention, as for instance in the Romanian case[395].

[394] The Poland case with ENI involvment; Umberto Mazzantini. Fracking, anche l'Eni abbandona l'eldorado polacco dello shale gas, January 15th 2014 - http://www.greenreport.it/news/energia/fracking-anche-leni-abbandona-leldorado-polacco-dello-shale-gas/#prettyPhoto; see also the French case; Shale gas ban in France to remain, says Hollande, in BBC news, July 2013 - http://www.bbc.com/news/business-23311963

[395] The Romanian case; Joshua Posaner. PM says no to shale gas in Romania as Chevron continues work, in Natural Gas Daily, November 11th 2014 - http://interfaxenergy.com/gasdaily/article/14160/pm-says-no-to-shale-gas-in-romania-as-chevron-continues-work

Fig. 10 – Fracking activity in Europe



Source: Bloomberg

Europe's shale gas resources are estimated to be about four-fifths the size of those in the U.S. Yet only two countries, Poland and the U.K., are actively pursuing them[396]. France and the Netherlands have chosen to ban fracking and the German government is still facing social protests. In addition, both U.K. and Poland are facing some problems: the first interrupted fracking activity for little earthquake caused by ground perforations, and the second has been invested by populations' preoccupations over environmental damaging. Besides, the example of the American landowners which are provided by oil or gas-rich lands do not exist anywhere else. The European territory in which oil and gas is present, it is mostly already owned by states[397]. In this vision the apparently profitable conditions that American farmers have benefited are not repeatable in Europe. In some cases however, probably the resort to shale gas could be considered by governments as a method for replacing the usage of nuclear power, like for Germany. European states are so facing various problematic issues in the energy field, partly caused by dependence from Russia and the necessity to diversify sources as well as energy raw materials. Partly by the necessity to decrease environmental and economic impact caused by polluting energy sources like coal or the attention for avoiding alternative but dangerous sources.

[396] Even if in both cases the question is under discussion due to legislation and environmental problems. See; Natural Gas Europe, UK Government Chief Scientific Advisor Slams Fracking - http://www.naturalgaseurope.com/uk-chief-scientific-advisor-slams-fracking-thalidomide and; Bloomberg, Fracking Setback in Poland Dims Hope for Less Russian Gas - http://www.bloomberg.com/news/2014-10-09/fracking-setback-in-poland-dim-hopes-for-less-russian-gas.html

[397] Nidaa Bakshsh. Fracking in Europe, in Bloomberg, October 30th 2014 - http://www.bloombergview.com/quicktake/fracking-europe

However, the overview on further energy options that this chapter has aimed to trace, can be a starting point for future considerations on the importance of taking into account new sources for the European supply assurance, which implicitly can benefit south-east Europe energy security research. For instance, from one side the discussions over the TTIP[398] can take shape and become soon reality, permitting trade among USA and Europe to be less onerous, including new opportunities for the LNG. From the other, nations approach towards south-east Mediterranean in terms of cooperation and tensions leveling, could be a useful method for the future construction of a pipeline or a trade plan involving the EU and its Mediterranean neighbors. In other terms, conventional natural gas could still represent the most secure sources in order to establish national energy security as well as giving the opportunity to some European-gas linked states to develop a process of cooperation with their neighbor, why not benefiting the Union's economy.

However, the LNG market, like other conventional or non-conventional gases, is not having a favorable moment. The fall of oil prices, to which most of LNG supply contracts are linked, have caused a decreasing of methane prices. As a consequence, some of the newest LNG exporters in the world, like Australia, are now confronting to a crisis due to the LNG elevated production costs[399], which make almost impossible for them to sell natural gas at the current low market prices in Europe.

[398] Trans-Atlantic Trade and Investments Partnership - http://en.wikipedia.org/wiki/Transatlantic_Trade_and_Investment_Partnership

[399] Leonardo Maugeri. Gas, il mondo (e l'America) dovrà attendere, article on "Il Sole 24 Ore", December 30th 2014 – http://www.ilsole24ore.com/art/commenti-e-idee/2014-12-30/gas-mondo-e-l-america-dovra-attendere-063836.shtml?uuid=ABMYzqWC

THE ROLE OF ITALY
Challenges and Opportunities

5.1 The Italian gas market situation

The analysis this work has aimed to develop until here, has been voluntarily focused on the European gas sector. Despite the crucial situation is now going through the European energy field, concerning especially the fossil fuels price crisis and Russian large-exporter uncertain position, natural gas still represents one of the most cost-efficient substances to be used in many sectors. Its low environment impact as well as its high efficiency in power plants and household heating, enables it to remain one of the main energy sources the European countries could rely on. At this point, it is right and proper to make an overview of one of the European largest gas importers, a nation which has lately invested in focused alternative gas infrastructures, leaving today some glimmers of light for future implementations of its national gas grid and energy security; possibly becoming, alongside with Turkey, one of the main gas hub Europe is searching for its southern regions supply security. For sure, although new and positive perspectives are affordable, it is impossible not to consider the huge economic, political and environmental challenges Italy is facing, issues which should not be omitted if a well-functioning gas sector wants to be created.

Italian gas sector development is a long-standing process which started in the aftermath of World War II. The energy-state company "Agip" found in that period large quantities of natural gas in the Po Valley region, in northern Italy. From that moment natural gas has become the major resource in order to substitute imported oil and coal. The relatively cheap costs of extraction and production at that time enabled local manufacturing industry to expand rapidly between the 1950s and 1960s. Profits coming from natural gas sales were reinvested in order to enlarge production activities and to expand the national pipeline network: the Italian gas grid reached 2000 km already by 1952[400]. When the “Ente Nazionale Idrocarburi” (ENI) was created in 1953, it absorbed the whole "Agip’s" activities, including the exploitation of the Po Valley and those in the Adriatic region[401]. By 1960, Italy had become the largest gas producer and consumer in Europe and, also for this reason, as

[400] Anouk Honoré. The Italian Gas Market: Challenges and Opportunities, The Oxford Institute for Energy Studies, Working Paper NG76, June 2013, Oxford

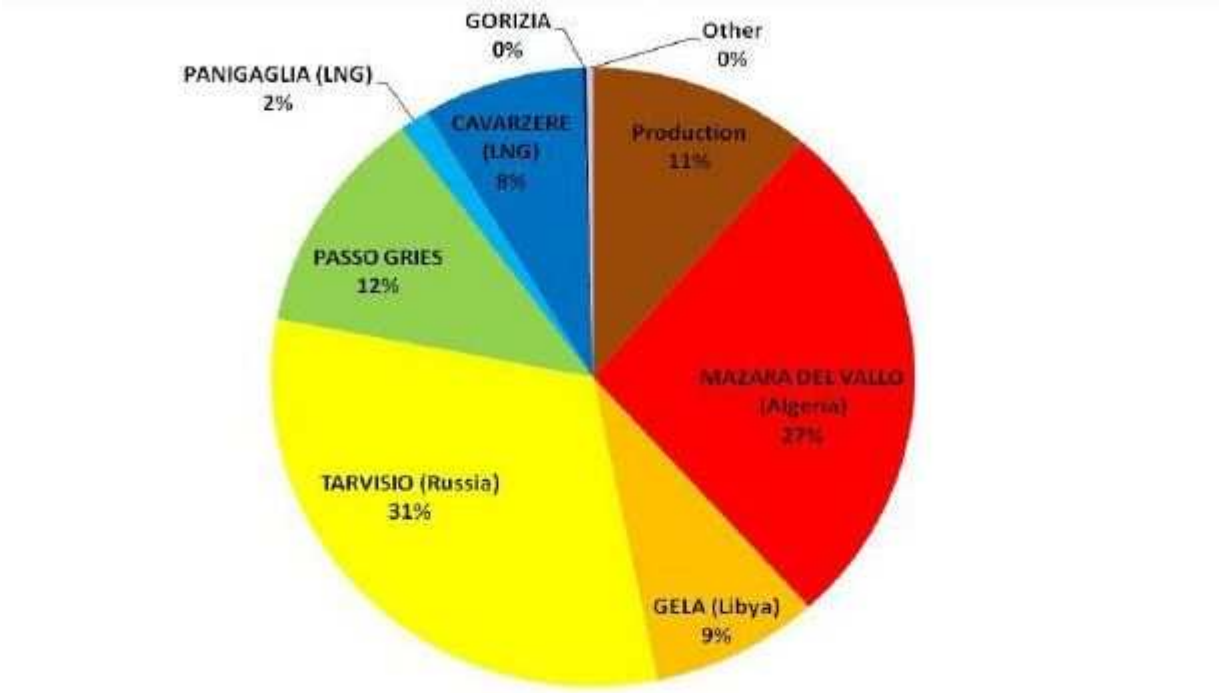
[401] Law n. 136 of February 10th 1953 – Ministero dello Sviluppo Economico (Italy) - http://unmig.sviluppoeconomico.gov.it/unmig/norme/136l53.htm

reported in chapter 4, its activity in the international energy ground is lasting for a long time[402]. Its vertical integration and monopolistic position permit to ENI to expand the gas network even in areas where low residential demand, due to warmer climate, as well as low industrial demand, due to slower economic development, was not considered to be profitable[403]. It is import to underline that, in this case, taking also into account the economic trend of the period (the 1950s and 1960s), prices were regulated arbitrarily by ENI, enabling also industrial users to benefits small prices increase because just negotiated between ENI and trade associations[404]. What instead we assist today, thanks to the large liberalization process which affects the whole energy market, energy (and gas) prices fluctuation makes consumers' choice over gas procurement an awkward issue, especially in the industrial sector. By 1970, the Italian pipeline network had reached 8000 km creating a proper national gas network from north to south[400]. Natural gas has in sum started to substitute town gas[405] as well as becoming an alternative for the dominant present of other fossil fuel in that period[400]. Effectively, in a period like the 1970s, in which the oil shocks were bring the occident to its knees, the advent of natural gas had revealed to Italy its importance in order to lessen national oil imports. However, if from one side Italy could be seen as one of the gas-pioneer countries, from the other, growing industrial and residential demand has rapidly shown that domestic production was not sufficient to support the gas market in that period. Inevitably, from 1974, pipeline gas started to be imported from Russia and the Netherlands[400]. The 1980s saw the national network enlargement, reaching 15.000 km, together with the first line forming the today's "Transmed"[406]. Lately, in 1990s, Italian pipeline grid reached three times its 1980s length, as well as the drastic growth of the gas usage for power generation. The advent of the "combine cycle technology" together with the decision to abandon nuclear power in 1987, contributed to the rapid success of gas-fired power plants in Italy. These combined questions, had their result into a quick importations growth, in addition to infrastructures investment for the "Greenstream" pipeline, which still today links the country with Lybia (2004). Besides, the other two LNG terminals constructed between 2009 and 2013, in addition to the first, operational since the 1970s, make Italy enter the international energy market, from which it was excluded until the 1990s. What really mutated the Italian gas market profile it is the state's nowadays high dependence on importations. In

[402] IEA (2012), pp. 157 and 171
[403] For instance the southern part of the country (edn)
[404] Alberto Cavaliere. The Liberalization of Natural Gas Markets: Regulatory Reform and Competition Failures in Italy, The Oxford Institute for Energy Studies, Working Paper NG20, 2007, Oxford.
[405] a poisonous manufactured gas, supplied to domestic consumers for heating, cooking and (formerly) lighting; it is a mixture of carbon monoxide and hydrogen formed by the reaction of coke with steam – wikidictionary - http://en.wiktionary.org/wiki/town_gas
[406] Which is composed by two line (edn)

a moment, like today, in which domestic and European gas demand have decrease considerably, when high investments have been made for exploiting national resources and trade capabilities (considering large investments made in the LNG sector for instance), being one of the major exporters' client could be too inefficient and unprofitable for the Italian energy market economic balance. Considering this, the central question is revolving around the fact that if the construction of the "Southern Corridor" could represent a game-changer for the Italian and the south-east European energy security.

Fig. 1 – Gas imports to Italy by source and delivery point



Source: Ministero dello Sviluppo Economico

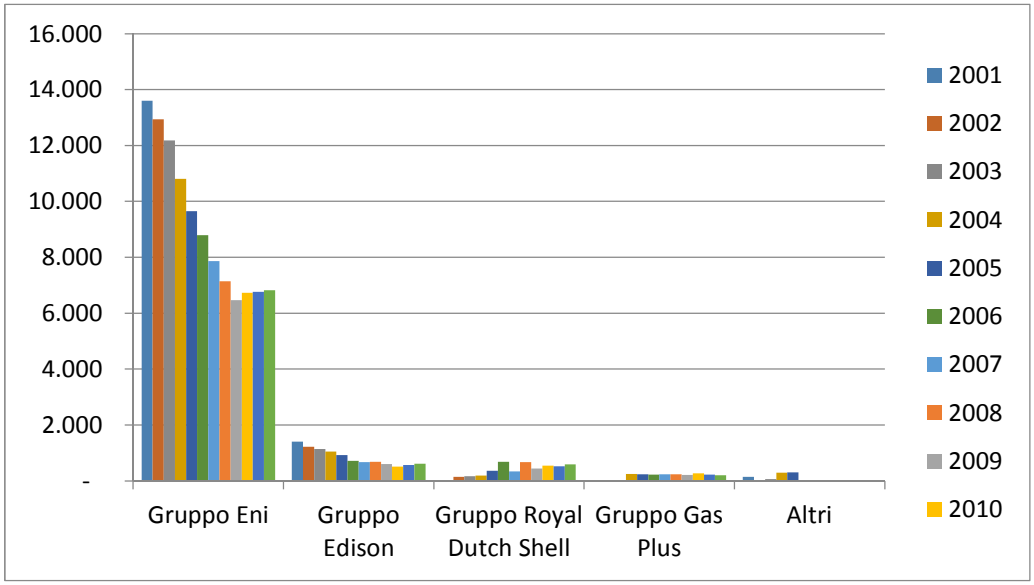
Looking to some data, strong gas demand consumption have grown for all the 2000s when it stopped suddenly in 2005, in a moment in which slowing GDP[407], combined to high oil-linked contract prices, permitted to renewable energy to enter consistently the energy market, partly affecting the gas sector. In fact, gas demand remained flat until 2008, when it felt drastically due to the economic recession. If an apparent recovery has been perceived in 2010, thanks to a quick economic upswing, in 2011 and 2012 and seemingly continuing for whole 2013, gas demand has

[407] Gross Domestic Prouct (edn)

also declined. 2014 has shown a small recovery but in an inconsistent amount if looked in the medium and long period of decreasing, starting from 2008[408].

Nevertheless, in 2011 IEA data put Italy as the second largest gas market in Europe, consuming 77,9 bmc: the residential and commercial sector occupied the largest part of the market (39,8%) followed by power (35,9%) and industry (19,9%). However later "Snam Rete Gas" data, the company which control natural gas network in Italy, register a general decline for the period 2012-2013. In this context, the liberalization process which necessarily involved Italy in the 1990s created favorable conditions for the arrival of new companies into the gas market. From the upstream side, ENI remain the major producer, contributing for around 80% of Italian domestic production. Other producers had so the possibility to enter the market, as the Royal Dutch Shell, Edison, Gas Plus and other smaller actors.

Fig. 2 – Evolution of natural gas production by company 2001-2012



Source: Autorità per l'energia elettrica, il gas e il Sistema idrico (AEEG)

If, from one side, national production is today not enough to support domestic consumption, even in a period of decreasing demand like this, imports have inevitably to enter the Italian gas sector. In this view, 90% of the gas used in Italy is imported and, although antitrust measures had

[408] Snam Rete Gas. "Tassi di utilizzo e flussi medi" – Anno 2013/2014 – snamretegas.it - http://www.snamretegas.it/it/servizi/Quantita_gas_trasportato/3_Tassi_utilizzo_flussi_medi/

progressively limited this attitude[409], ENI, "Edison" and "Enel Trade" covered until 2011 the 72,3% slice of the market[410].

Storage activity is fully absorbed by “Sogit” (a Snam subsidiary) and “Edison Stoccaggio’s” hands, while the wholesale market include 143 companies fully operating, where ENI represent 14,8% of the total[400], a small slice, considering the company’s dominance in the upstream sector, but twice as much as its primary competitor, Edison. However, they represent, together with "Enel Trade" and "Gdf Suez"[411], the five most influencing companies operating in the Italian gas market. Considering what reported by experts, the Italian gas market, especially in the wholesale market context, is moving to be more competitive, if we look to 2009 data which show around 50% of the market controlled by those top-five companies. The liberalization process is having its effects even though, from the other side, it is not yet effectively demonstrated if the loss of relevance of a mostly-state controlled company, like ENI, can have good or bad effects on the national energy security stability. In economic terms, a huge slice of the market, both in upstream and wholesale market activities, controlled by an Italian energy firm, would be apparently more favorable for the state’s balance. ENI’s central position in the Italian energy field, and especially in the gas market, is well-known since the former state-controlled companies helped the Italian government to build its gas network in the 1950s. Unbundling clauses on the EU model, was not the right measure to limit ENI and “Snam” activities, even if this attitude looked more as bringing the national legislation to a compliance with the EU law, than being a focused measure to exclude ENI dominance from the Italian market. The well-structured firm is also a useful channel to lessen political tension in the international ground, or establish new relationship with gas-rich regions, as well as a useful mean to make profits in the energy field for the Italian government[412].

Importations represent the Italian largest way to cope its gas supply security. Precisely, 90,4% of Italy’s gas consumption comes from foreign sources (although in part with a participation of ENI as shareholder). The vast majority concern pipeline gas (88%), while LNG accounts for around 2%, involving also Qatar in the scene. In this context some other important players such as Algeria (29%), Russia (31%), Libya (9%), Northern Europe, especially the Netherlands (12%), contribute to

[409] Because of the massive control these three Italian companies were having on the national but liberalized gas market (edn)

[410] Autorità per l’energia elettrica, il gas e il sistema idrico (AEEG). Primi venti importatori in Italia 2004-2012, October 2013 – autorità.energia.it - http://www.autorita.energia.it/it/dati/gm51.htm

[411] A French energy company (edn)

[412] Since one of the major ENI’s shareholder is the Italian state - http://www.eni.com/en_IT/governance/shareholders/relevant-participation/relevant-participation.shtml

complete the Italian gas mix[413]. From the market side, the AEEG[414], the Italian regulator authority, has introduced a monitored gas exchange since 2009. In addition since 2003 the Italian gas network benefits of the "Punto di Scambio Virtuale", which consist in the existence of a virtual hub of entry/exit zone in which natural gas can be daily bought and sold in the wholesale market. To support the system meanwhile, the national GME[415] launched three platforms in order to manage the gas grid transactions and constituting the 28,7% of the Italian gas mix. It concerns the trading platform for monthly and yearly products (P-GAS); a spot market for the day-ahead and intraday transactions (M-GAS); and a "balancing" platform, which concern balanced transaction including storage (PB-GAS). This articulated system supposed the necessity to create a gas exchange in which virtual amount of natural gas is exchanged between buyer and seller. In this view, as a witness to the demand-related problems European countries, but particularly Italy, are going though, experts report that gas traded at PSV[416] has not increased as quickly as some of the Italian's European counterparts, even though trends are slightly increasing[400]. The bright sides instead are represented by the large amount of spot transactions taking place in this national transmission network, moving away from bad examples as Russia-related long term and oil-indexed contracts, contributing to enforce the EU work toward setting up of a free, simple and well-structured gas market in its territory. To contrast with this idea, the Italian gas market dominated by the ENI presence contributes to create difficulties for smaller operators to access to the main pipelines into Italy. In this context, the Italian authority provided with two "Release Gas Program" in 2007 and 2009 to authorize the traders which not usually operates outside PSV zone, to use part of these pipeline supply even if they were not users of the transport system.

In this context, the major pipelines that enter Italy, contributing to the nation acquisition of natural gas thanks to foreign supplies, are: the TAG[417], the "Trans-Med"[418], "Transitgas"[419] and the

[413] Ministero dello Sviluppo Economico, 2012.
[414] Autorità per l'energia elettrica, il gas e il sistema idrico (edn)
[415] Gestore Mercati Energetici (edn)
[416] Punto di Scambio Virtuale (edn)
[417] This pipeline, realized between the 1970s and the 2000s, provides for the Italian gas supplies with Russian gas though Austria. The entry/exit zone are Tarvisio and Gorizia, at the north-eastern Italian borders with Austria - http://it.wikipedia.org/wiki/Trans_Austria_Gas_Pipeline
[418] Is a natural gas pipeline from Algeria via Tunisia to Sicily and thence to mainland Italy. Its constructon took place between the 1980s and the 1990s - http://en.wikipedia.org/wiki/Trans-Mediterranean_Pipeline
[419] Is a Swiss pipeline which, after connecting with the "Trans Europa Naturgas Pipeline", transports natural gas from the Netherlands to Italy. It starts its activity from 1970, and it wa enrlanged during the 2000s - http://it.wikipedia.org/wiki/Transitgas

"Greenstream"[420]. To this set of pipelines should be added the TAP and the possibility see the GALSI[421] project construction, which has been shelved for a long time.

Fig. 3 – Foreign gas supplies entering Italy

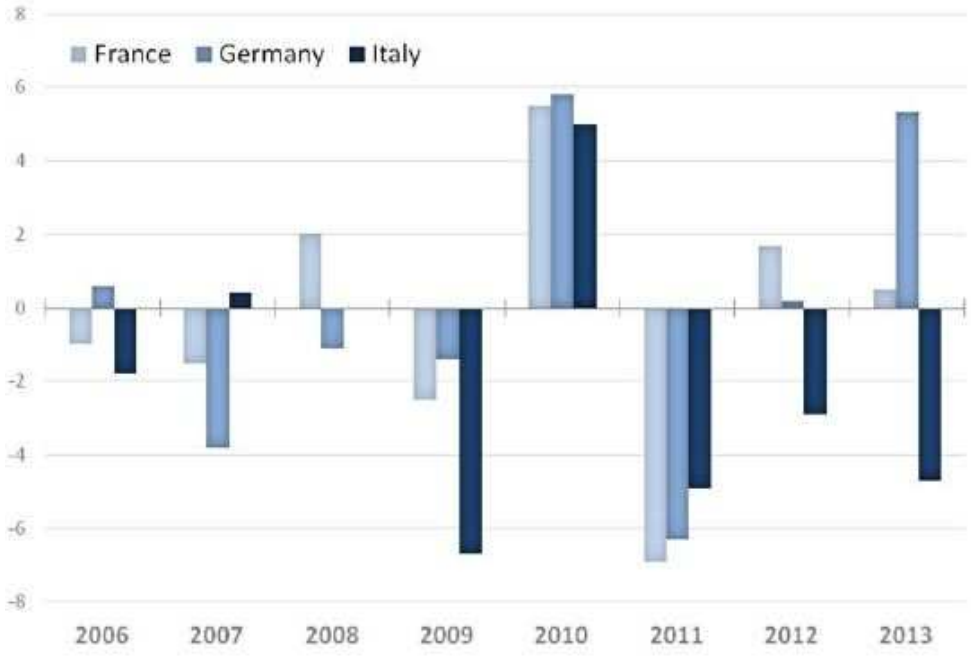
Source: Limes – Rivista Italiana di Geopolitica

Taking into account the situation the current Italian gas market is representing, can be summarily said that Italy is traditionally a huge natural gas consumer, being the third European natural gas market, behind Germany and UK. At the end of 2013 final Italian consumes were around 68 bcm, 15% of the entire EU market. Italy furthermore dispose a 34.500-km gas grid, a 16 bcm storage capacity and 350 bcm per day importation capacity posing itself among the most dense European

[420] Is a natural gas submarine pipeline from Libya to Italy. It is operational since 2004, although its realization had been discussing since the 1970s - http://en.wikipedia.org/wiki/Greenstream_pipeline
[421] is a planned natural gas pipeline from Algeria to Sardinia and further northern Italy - http://en.wikipedia.org/wiki/GALSI

gas system[422]. Considering this, when the European decreasing demand started to claim its victims in the period 2010-2012, contributing to a contraction of 10% for the EU region, Italy has lost 8 bcm to its usual final demand distribution. Besides, 2013 trends saw the Italian market continuing to lose other 5 bcm, while German and French data showed a growth. 2013 consumptions decreasing, although a light recover of the production data in 2014, is drastically weighing on the Italian gas mix[423]. "Snam Rete Gas", the managing authority for the Italian gas distribution, reported that gas consumption in 2014 has decreased around 5 bcm less than the same period in 2013[424]. To saying the truth, Italian gas output had already proved market difficulties when some data reported that the national gas production was decreased from 153 TWh[425] in 2010 to 110 TWh in 2013, that is 28% less. What additionally affects the whole Italian gas market is the electricity power plants generation dilemma: it saw the decreasing from 29 to 20 bcm in 2014, 31% less than 2010[423]. Surely, the reduction of the electricity demand as well as the European decreasing of gas demand, still in a spot after the 2008 global economic crisis, are playing a central role in this context.

Fig. 4 – Gas consumption variation: a comparison between France, Germany and Italy



Source: ISPI (y: bcm; x: year)

[422] Snam Rete Gas (2013)
[423] Matteo Verda. Background – il mercato italiano del gas, ISPI – Istituto per gli Studi di Politica Internazionale, on ispi online, July 2014 – ispionline.it - http://www.ispionline.it/en/node/10935
[424] First half of 2014 (edn)
[425] Terawattora (edn)

What really should concern the Italian government and private energy companies is that however oil-linked contract still remain a crucial question for the Italian energy market, in this sense experts report they continue to be the majority of the transaction clauses[400], although many of them have been reevaluated. In addition, most of the import activity is conducted under the basis of long-term take-or-pay contracts, especially with Russia. As a witness to this, a study has highlighted that in 2011 only 9% of the Italian gas contracts were one-year long and the rest consisted on a total duration not less than 20 years[400]. It would be interesting to follow how the situation will evolve, in a moment like this in which Russia hegemony is creaking under the blows of currency devaluation and oil fall in price. The average price of gas on the PSV[426] market in 2011 was 25% higher than on the principal north-European hubs, and price of long-term Italian domestic take-or-pay contracts was expected to have also been higher, on average, than similar European ones. Oil prices have remained high despite the weak global economy after 2008 world crisis, but only recently, market-driven causes as well as geopolitical questions, has brought oil prices to a decline, forcing some energy-linked economy to review its international position[427], including gas contracts prices, fallen together with oil ones.

However, whether or not oil prices will remain low, favouring in this case those states, like Italy, which are still tied to oil-indexed gas contracts, a revision of the energy policy in this sense would be necessary in order to avoid likely oil prices growth in the future. Surely, contracts renegotiation and possibly the conversion to normal spot prices transaction, would be a useful method for the Italian system, which could assist midstream and downstream operators. As some experts report anyway, this evolution seems to be slower in Southern and Eastern Europe markets[400].

5.2 Gas for the TAP

Differently, in terms of pipelines development, which could soon contribute to increase the Italian energy security, surely, as largely reported in the previous chapters, the Caspian region represented the more feasible alternative. The European diversification process, in which the main purpose is to lighten its energy dependence constructing the so-called "Forth Corridor"[428] and which is expected to end in the Italian territory with the TAP project, is at its core in this period. Despite TAP is the

[426] Punto di Scambio Virtuale (edn)
[427] This question has been discussed in chapter 4 (edn)
[428] As known as the Southern Gas Corridor (edn)

most credible option, other alternatives have been discussed by the government recently for the Italian gas procurements. As first, one of the most awkward questions is represented by the GALSI project: it was planned to connect Algeria to Italy via Sardinia, with a final gas transition of 16 bcm per year[429]. Despite the project is officially "under construction", as the consortium website displays[430], the Algerian shareholder, "Sonotrach", which has invested the majority in the project, has put back its final investment decision in order to wait favorable economic and technical consitions[400]. As a consequence, the future of the initiative remain on Algeria's ability to develop sufficient production, considering energy (and gas) demand increasing in all the Maghreb region, and the ability, as discussed in chapter 4, of disposing the adapt technological, knowledge and infrastructural condition to develop the project. At the moment all these appears at least unstable. To continue, the "North Stream"[431] pipeline, which links Russia to Northern Europe, if implemented with two additional lines (line 3 and 4)[432] could finally be connected to the "Trans Europa Naturgas Pipeline" (TENP), including the possibility to reach the "Transigas" transmission into the Italian territory. In this vision, also the Italian-Austrian "Trans Austria Gasleitung" (TAG) could benefit of this implementation and enter Italy via Tarvisio and Gorizia.

In addition to this options, efforts for establishing and integrated market and well-allocated capacity plan is at the core of the Italian energy authority. In 2012 "Snam Rete Gas" published its "Gas Regional Investment Plan" (GRIP) for the "Southern Corridor" region concerning the 2012-2021 period. This includes proposals for infrastructure improvement in the national grid and cross-border bi-directional flows in order to fulfill the goal to have an integrated market at least among close partners, like Austria for instance. In addition "Snam" and its Belgian counterparts, "Fluxys", have signed in 2012 a "Memorandum of Understanding"[433] displaying their interests in developing a reverse flow system which would connect south to north Europe starting from Italy, passing through the Swiss "Transigas" and then into Germany and France through the TENP[434], pipeline which links Germany to Belgium and to the UK[400]. This would not only create a bi-directional north/south transmission system including the whole EU, but also would enable Italy to became a southern

[429] The consortium is composed by Sonotrach (41,6%), Edison (20,8%), Enel (15,6%), Sfirs (11,6%), Hera Trading (10,4%) - http://it.wikipedia.org/wiki/Galsi
[430] GALSI website - http://www.galsi.it/
[431] Is an offshore natural gas pipeline from Vyborg in the Russian Federation to Greifswald in Germany - http://en.wikipedia.org/wiki/Nord_Stream
[432] Natural Gas Europe. Stratfor: A Possible Nord Stream Expansion, April 16th 2013 – naturalgaseurope.com - http://www.naturalgaseurope.com/a-possible-nord-stream-expansion
[433] Snam Rete Gas. Fluxys and Snam sign MoU to combine their international assets in Europe, March 2014 – snam.it - http://www.snam.it/export/sites/snam/repository/ENG_file/Media/Press_releases/2014/PR_MoU_Snam-Fluxys.pdf
[434] Trans Europa Naturgas Pipeline (edn)

Europe gas trading hub and transit country, not later than 2020. Italy's favorable geographical position could furthermore contribute to convince and, above all, accelerate the development of the "Southern Corridor" as well as of the TAP project, another piece of the puzzle which could be added to this new European pipelines framework.

Initially launched by the U.S. administration in the 1990s in order to cover its lack of power in the south-east Europe region after the fall of the Soviet Union, the "Southern Corridor" has become in the following years one of main energy initiatives in the European Union hands[435], especially after its formalization in 2008. The key actor in this view is represented by Azerbaijan, as repeatedly reported in this work. In 2011 the Baku government has developed the idea to construct the "Trans-Anatolian Pipeline" (TANAP), which will soon transport the "Shah Deniz II" gas from the Turkish-Georgian border to the Turkish and then Greek territory. Meanwhile an important step for Italy is represented by the ratification by the Italian Parliament of the trilateral-intergovernmental agreement among Italy, Greece and Albania for the development and the construction of the "Trans-Adriatic Pipeline" (TAP), which from 2019 will carry the Azeri gas from Greece to the Italian Adriatic coasts, near Lecce, and which will be linked to the TANAP, finally shaping the largest part of the "Southern Corridor". Born as an American idea, developed with the EU intention to increase its energy security in south-east Europe, the project today, in addition to highlight the importance of the Azeri presence, could represent a huge alternative for the European gas sector supplies. However, it is important to underline the efforts made by both the European Union and Azerbaijan to institute close relationships in the development of the project. In this context, Italy stands in a crucial role, its policies and actions will contribute to ensure, although scarce, the 2% of the European supplies which the Corridor will guarantee, as well as take advantage of the possibility to become a trade hub for whole the EU, especially if capacity implementation will be made.

In this scenario, the most important infrastructure, able to fill the blank space left in the European gas pipelines network in its south-east regions, as well as being a useful mean which will permit Italy to increase its relevance as energy actor in the international ground, is the TAP project. Once realized, this pipeline will permit Italy to import 8 bcm per year of natural gas from the "Shah Deniz" gas field and passing through the Turkish territory with TANAP. 10% of the Italian gas consumes can be satisfied by this project, completing the Italian gas procurements framework together with the other three main gas supplies routes entering the Italian territory: the North

[435] Nicolò Sartori. L'Italia e il Corridoi Sud, November-December 2013, in Risk – Rivista di Geostrategia online - http://riskonline.it/litalia-e-il-corridoio-sud/

African, the North European and the Russian. The TAP project started in the first half of the 2000s, when the Swiss energy company EGL managed the initial feasibility studies. Changed its name into "Axpo", the EGL in 2008 formed a joint venture with the Norwegian “Statoil” for the development and the construction of the project. To this new company, headquartered in Switzerland, has joined the German “E.On” which acquired 15% of the project. The initial phase provided for an 870-kilometers pipeline supposed to pass through Greece, Albania and finally Italy, shaping what it is now intended as the last piece of the “Southern Corridor”. The pipeline additionally proposes to enlarge the transported capacity to 20 bcm, proposal which, together with its relatively easy realization and the economically interesting markets it could reach, convinced the “Shah Deniz” consortium in 2012-2013 period to select this option. As a witness to this, the pipeline’s ownership has been extended in the same period to the Azeri SOCAR, the British BP, which, together with “Statoil”, controls the 20% of the whole project. The Belgian “Fluxys” (19%), the Spanish “Energas” (16%), leaving to "Axpo" the remaining 5%[436], complete the scheme. At the moment the TAP is announced to start its construction not later than 2016 and, at the same time, it was ensured by the parts that it could rely on the support of all the countries it pass through. In addition, the EU has included it into the “Project of Common Interest” list[437] as well as having excluded it to follow the EU’s “Third Party Access” clause, a move that made the project an appetizing dish in the eyes of foreign investors. The final decision of the “Shah Deniz” consortium for the development of the second phase[438] of the project by 2018, together with the complete reservation of the full transportation capacity of the pipeline for the Azeri’s SOCAR, foresees a rosy future for TAP. Meanwhile, in 2013, its 25-year transportation amount has been already assigned: 1 bcm/y to the Greek “DEPA”, 1 bcm/y to the Bulgarian “Bulgargas”, 2,6 bcm/y to the French “GDF Suez”, 1,6 bcm/y to the German “E.On”, 1 bcm/y to the Anglo-Dutch “Shell”, 0,3 bcm/y to the Italian “Hera” and other not known amount to the Italian “Enel”, the Spanish “Gas Natural Fenosa” and “Axpo”. It is necessary to underline in this context that, except for the first two, the total pipeline gas amount will be exclusively sold in the Italian territory[436].

For what concern the construction instead, part of the needed funds could probably be dispensed by the “European Investment Bank” (EIB) or the “European Bank for Reconstruction and Development” (EBRD) for an amount of around 6-700 million euros starting from 2015, supporting

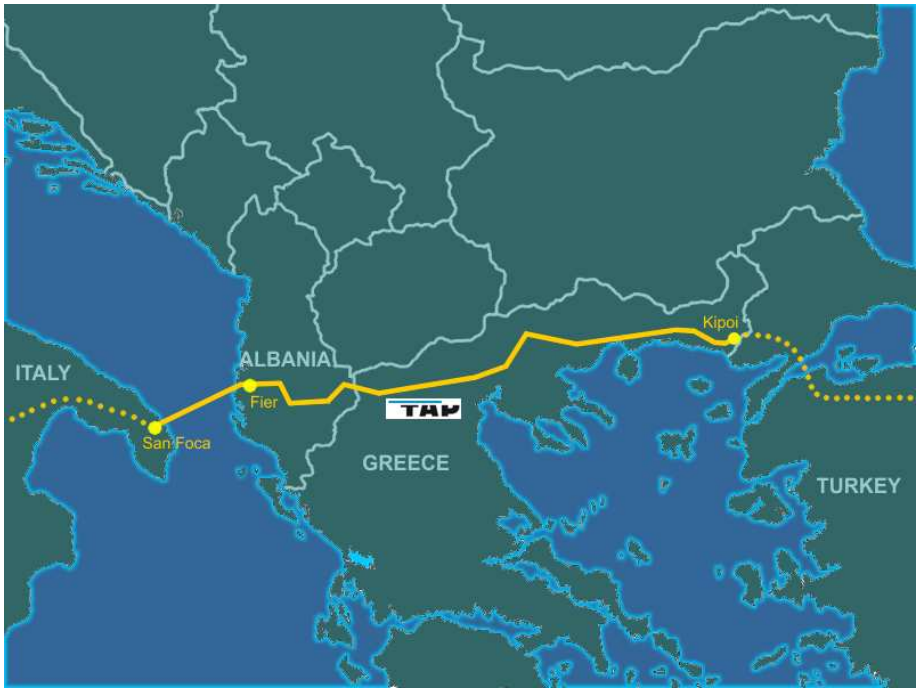
[436] Nicolò Rossetto. La TAP e l’Italia: le opportunità di una nuova infrastruttura, Analysis n. 278, November 2014, Istituto per gli Studi di Politica Internazionale, ISPI, Milan.
[437] Discussed in chapter two (edn)
[438] Shah Deniz phase 2 concern the development of the Southern Corridor gas supplies in its entirety, including TAP (edn)

the total cost of the project which is around 4,4 billion euros, supposed to be concluded until the end of 2018[436] and in which foreign investors play a central role, even from the financing side. The itinerary of the pipeline has been well traced by technicians: 545 km in the Greek territory after having been connected to the Turkish TANAP, which in turn is receiving gas supplies from the "South Caucasus Pipeline" (SCP), straightly connected to the Azeri ground. In particular, the TAP will proceed from Kipoi to Ieropigi, close to the Albania border and then, crossing Albania for 211 km and arriving to Fier, the pipeline will go offshore in the Adriatic Sea for 105 km reaching the Puglia region coast to San Foca. Finally an 8-kilometer onshore section will conduct the gas to the receiving terminal, where TAP will be connected to the "Snam Rete Gas" pipeline network[436]. Other options suggest that TAP could be implemented and directed through the Balkan with the realization of the "Interconnector Greece-Bulgaria"[439] (IGB) or the "Ionian Adriatic Pipeline"[440], which could enable further supplies to be sent toward Bulgaria and Montenegro, as well as Bosnia and Croatia. At the moment however, both studies are slowly proceeding.

TAP, experts suggest, would remain operational for 40-50 years, the time needed before the Azeri "Shah Deniz" field will consume its reserves. However, as repeatedly reporter in this work, the pipeline and the whole Southern Corridor could continue to operate if other richer gas fields in the Middle East or the same Caspian region, will be connected. In this term, the fragile political situation among Iran, EU and U.S.A, or the undeveloped energy relations with Israel and Cyprus, as well as the possibility to include Turkmen gas into the Corridor, could represent a future debate in the international relations agenda for the EU and its partners.

[439] Interconnector Greece-Bulgaria - http://en.wikipedia.org/wiki/Gas_Interconnector_Greece-Bulgaria
[440] Ionian Adriatic Pipeline - http://en.wikipedia.org/wiki/Ionian_Adriatic_Pipeline

Fig. 5 – The Trans-Adriatic Pipeline (TAP) itinerary



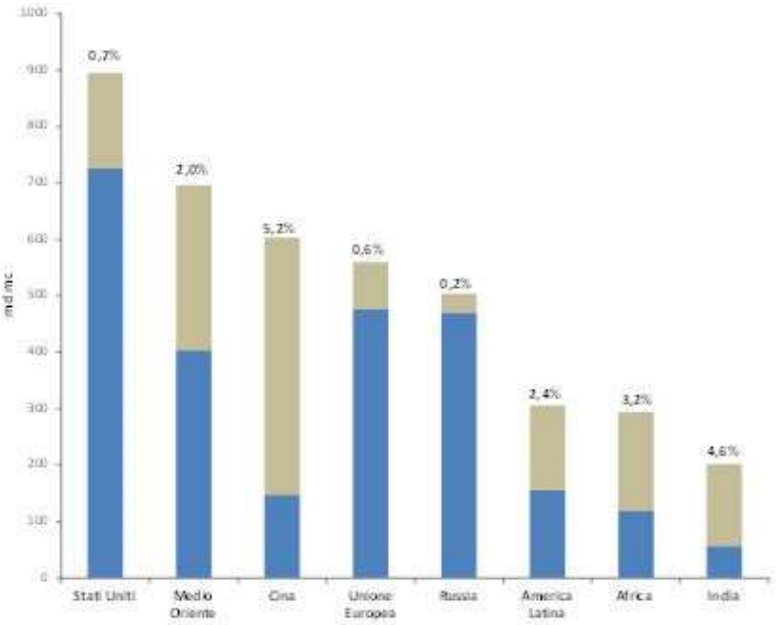
Source: Wikipedia

Experts suggest that the TAP has many bright sides. In a first instance, the entry into function of the TAP will surely increase Italy energy security. As a consequence, also the European energy security will be raised due to the gas transmitted in its territory through the "Corridor", covering natural gas supply for Greece and possibly for the Balkans and all the south-east Europe members. This contributes in addition to support the diversification process the EU is searching for, both in terms of importation routes and supply sources. In fact, south-east Europe region, was the only European geographical area lacking of a consistent and efficient gas pipeline. In this context furthermore, Azerbaijan has the opportunity to become one of the main European partners in the gas field. Considering this, huge preoccupations concerning the EU over the current instability of Russia or Libya, two of those suppliers which control most of the European gas offer, will be better managed in case of possible future gas cut.

Certainly, 10 bcm per year could not represent a very large amount in comparison to the European yearly energy demand, 460 bcm in 2013, of which 300 bcm have been imported[436]. In any case, the pipeline could support local or regional demand: Greece for instance satisfies all its consumes, only 4 bcm per year, only with importation coming from Russia through a unique pipeline. In this sense, a small interruption, even for technical measures, could seriously damage Greece energy system.

Moreover, although the reasonable amount, south-east Europe countries and Italy could however improve their storage activity in order to store as much gas as possible for sudden increasing demand or seasonal growth, as well as for external and unexpected political decision to stop the supplies. Storage infrastructures stand as key-assets for the south-east European gas system. They can support consumption modulation, ensuring flexibility of gas distribution and permitting, even in today's low consumption situation, to cope exceeding amounts, inescapable precondition of take-or-pay contracts[441]. From another observation, it is however to take into account that the Italian current adduction system is facing a period of exceeding capacity, mainly due to the natural gas demand decreasing, as well as in a smaller amount for the expansion of renewable energy for electricity generation[436]. All existing infrastructures in the Italian territory can support a capacity of 125 bcm/y, that represent double the natural gas importation of 2013 (62 bcm)[436]. Despite this, sudden supply interruptions can affect this condition, especially in case of unexpected increasing demand, which is supposed to rise of 0,6%, increasingly forcing Italy to rely on importations, in the period 2012-2040, as the "International Energy Agency" has reported[442] lately.

Fig. 6 – Evolution of natural gas demand in the 2012-2040 period



Source: World Energy Outlook (y: mmc; x: countries – blue: demand until 2012; grey: demand growth in the period 2012-2040)

[441] Antonio Sileo. Why Italy needs to T.A.P., article in "Limes – Rivista Italiana di Geopolitica", June 2014, Rome - http://temi.repubblica.it/limes-heartland/why-italy-needs-to-tap/2013
[442] IEA. World Energy Outlook 2014, International Energy Agency – worldenergyoutlook.com - http://www.iea.org/Textbase/npsum/WEO2014SUM.pdf

As a consequence, on the possibility if only part of the Italian supplies can stop, this could level the "security margin" between theoretical total imported, stored amount available and national gas demand. In this context, the 8 bcm coming with the TAP in addition to an implementation of the storage capacity and efficiency, especially if considered in a long-period analysis, the pipeline will guarantee to Italy to cope the most pessimistic options of gas cuts. To support this idea, as the 2010 European Commission's regulation reports, security of supply, given by efficient infrastructures, is needed in order to protect consumers against unpredicted disruption[443].

From the market side, the absence of ENI among the TAP shareholders could imply a price reduction for household and companies use. More gas injection among different operators into a territory could help free market dynamics, supported by the recent institution of the Italian "Borsa del Gas"[444]. In addition, as reported in chapter 3, within ten years more than half of importations contracts which tie Italy to respect onerous long-term supplies accompanied by take-or-pay clauses, will expire. This will permit contracts renegotiation basing supplies on spot prices or even a revisiting of the national energy policy, more conformed to the EU legislation, in order to avoid future complication in the Italian and so European gas market. The "Strategia Energetica Nazionale" (SEN), adopted by the Italian government in 2013, has clearly shown what the Italian direction in term of energy is: centering the efforts to become the Southern-European gas hub. In this view, the opportunity to turn the Italian gas grid into a European supply market is underlined by the southern and central Europe states energy self-sufficiency crisis, in which Italy could play a pivotal role. Its favored geographic position, in addition to its continuous updating gas infrastructures, could help the process of integration that the EU is supporting for a long time. Importing gas from Azerbaijan, Algeria, Libya and from the Arabic LNG sources such as Qatar, could represent enough amounts to support natural gas exportation to other European countries. Surely, distribution flexibility and a high competition market initially in the national ground, maybe encouraged by the EU, could represent a good starting point in order to create a new and more simple and efficient model for the gas market in Europe[441]. In this view, the TAP is in a central place: if from one side its construction could increase the Italian natural gas availability, from the other, implementing the reverse flow, it could distribute gas amounts to the Balkan and then to central European states, when needed. The rest is done by the Italian storage system, mainly located

[443] European Council and Parliament. Regulation (EU) n. 994/2010 – europe.eu - http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010R0994&from=EN

[444] A gas stock exchange, in which natural gas in sold and bought (edn)

in the " Pianura Padana"[445], which could store natural gas to be distributed in the Italian grid but also to the European northern regions. In this sense, "Snam Rete Gas" has already launched its implementation policy of the Italian gas network with the purpose to increase the reverse flow process from 2016[436]. This will permit to the Italian TSO[446] to transport gas across Passo Gries and then to Switzerland, or instead to Austria, passing through Tarvisio. In this context previsions report that the Italian gas exportation capacity will reach 40 mcm per day, around 8 bcm per year[436]. In addition, a central issue is represented by the proposed construction of a north-south pipeline which runs across Italy from Abruzzo to Emilia Romagna regions. The project should be concluded by 2019 with a capacity of 24 mcm per day, which would be possibly able to transport gas supplies from the TAP.

Moreover, the entire TAP project would not weigh on the Italian public expenditure since the investments for its realization are totally covered by TAP AG[447], while "Snam Rete Gas" will cover its investments through transportation tariffs paid in turn by the wholesale market buyers.

Finally, it is necessary not to forget that TAP, although Puglia citizen's protests have reignited the discussion over the project feasibility, could contribute to an economic development of the "Leccese" area. For what concern environmental damage instead, the idea that natural gas could affect the territory or that a pipeline could weigh as drastic environmental impact, is excluded by experts[448], who support the thesis that natural gas is essentially a clean energy source and that a pipeline construction is the less invasive action even compared to other renewable energy plants[449]. Besides, the construction of the onshore segment of the pipeline in the Italian territory, together with receiving plants and connection infrastructures to the national system, imply large investments and, as a consequence, the creation of jobs. According this vision, TAP construction will benefits, even if to a limited extent, the Puglia region. "Nomisma Energia" has conducted an analysis on these dynamics reporting that, provided that the financial efforts related to the project will be around 80 million euros per year[450], an average of 150 jobs will be created in the area[451]. Moreover,

[445] Autorità Garante della Concorrenza e del Mercato, Autorità per l'energia elettrica e il gas. Indagine conoscitiva sull'attività di stoccaggio di gas naturale, p. 24 – the model highilight the Italian main storage plants, all in the northern area called "Pianura Padana" - http://www.autorita.energia.it/allegati/docs/09/051-09visall.pdf

[446] The "Transmission System Operator" is an entity entrusted with transporting energy in the form of natural gas[1] or electrical power on a national or regional level, using fixed infrastructure - http://en.wikipedia.org/wiki/Transmission_system_operator

[447] Major TAP shareholders – tap-ag.com

[448] Trans-Adriatic Pipeline. Chi ha paura del tubo cattivo? – tap-ag.it - http://www.tap-ag.it/assets/07.reference_documents/italian/Stop%20Pregiudizi/tap-A4web-stopPregiudizi-ok.pdf

[449] Like wind turbines (edn)

[450] Matteo Verda. Contribution of TAP to the Italian economy, analysis n. 256, June 2014, Istituto per gli Sudi Politici Internazionali (ISPI), p. 3

positives effects have been foreseen in the operational procedures of the project which include operating costs and the maintenance of the infrastructure. These activities are supposed to create 250 jobs with costs around 12 million euros. Surely, even though experts continue to reiterate the limited environmental and social impact of the project, the citizens acceptability of the infrastructures presence in its territory remain a crucial point to solve, especially for the local governments.

To conclude, TAP's first stage will have a capacity of 10 bcm per year, although the infrastructure is projected to be expanded up to 20 bcm. This enlargement will depend on the availability of competitive upstream capacity and by the expected demand in the final markets. This wise decision has been taken according to the previsions of a slow Italian increasing demand for the next years. In this context, future consideration of the infrastructure development, which is strictly connected to the European gas demand, will be an interesting matter for future analysis. In sum, TAP's impact on the Italian economy is consistently positive: initial investments and operational costs, sustained by foreign energy companies, as well as jobs creation, constitute an important first step for the nation. According to this the Italian government and TSOs should work together in order to create efficient market competition dynamics, reducing wholesale and final prices. Additionally, the development of an export sector would support the Italian economy and domestic energy security, also benefitting the EU. The ambitious challenge of becoming a gas hub for the European market will surely imply for Italy to decrease dependence toward countries with geopolitical and economic complications. In this context storage activity plays a central role: the more capacity can be store, the larger the possibility to send gas supplies outside the national territory. If the Italian ambition is to become a benchmark for the EU gas market, large improvements are needed in the infrastructures and market ground. Foreign demand, especially concerning northern European states would continue for a longer period: in different climate conditions, compared to the Italian mild temperatures, natural gas supplies needs already start from the beginning of March. All this if added to exceptional growing internal demand implies that the Italian gas sector should do more efforts in order to construct a solid gas market system.

[451] Trans-Adriatic Pipeline. Politica sulla Responsabilità sociale d'impresa (RSI) – tap-ag.it - http://www.tap-ag.it/assets/07.reference_documents/italian/csr/TAP_CSR_policy_it.pdf

5.3 Current threats and future chances

To support the idea that the Italian gas sector should be implemented is not the possible decline of gas importations from Russia, which at the moment is very cautious in preserving its supply contracts with all its European clients[452], but rather problematic developments if supplies from the North African regions will be in jeopardy. In particular, the Algerian political situation is relatively stable, the possible political changes which will not probably occur in the long period, are related to President Bouteflika health conditions. The country in fact is held together by its regime that, in a moment of political succession will bring the country to an uncertain future, even considering that armed bands are operating it the southern part of the country, but that soon can arrive to Algeri. The "Transmed" pipeline, which transport to Italy Algerian but also Tunisian gas through Sicily, counts for 1/3 of the total Italian gas imports, around 13 bcm per year, the 18% of the total amount[453]. Experts however suggest that the Italian storage system could afford a supply interruption at the same moment both from Algeria and Russia[454]. In this context, the new Vice President of the European Commission for the energy union[455], Marco Sefcovic in Rome for the conference "Costruire un ponte energetico sul Mediterraneo" in November 2014, suggested that the Commission is favorable to approach North African states for further cooperative relations, not only in terms of importations but for the energy interchange on the whole Mediterranean region. It is quite clear that the Maghreb region is still very important not only for the Italian energy security, but also for the future of the European energy integrated market ambitions, which poses Italy in a primary position as possible gas hub for Europe.

However, experts have often reported that Italy could more easily face an interruption of gas supplies from Russia but, on the contrary, not from other sources. Is in fact the North Africa case, toward which national operators have been gazing since some months. If in the Algerian side the Italian operators have asked fewer supplies in the last part of 2014 projecting a controlled decreasing of gas amounts entering Italy, the Libyan situation is different. It has drastically cut its

[452] Oil prices fall and ruble value decline, along with global supply diversification of gas represent today for Russia an awkward question to solve. In this vision, Russia is trying to preserve if foreign energy policy (edn)

[453] ANSA. Gas: ecco da dove si rifornisce l'Italia, June 16th 2014, article on ansa.it - http://www.ansa.it/sito/notizie/mondo/2014/06/16/ansa-scheda-gas-ecco-da-dove-si-rifornisce-litalia_7a02a675-f529-45e1-9161-b44437f9c5bc.html

[454] Francesca Morandi. Gas all'Italia: tra conflitto Russia-Ucraina e crisi in Algeria resteremo "a secco"?, July 2014, Interview to Matteo Verda, researcher at Istituto per gli Studi di Politica Internazionale (ISPI) – forexinfo.it - http://www.forexinfo.it/Gas-all-Italia-tra-conflitto-Russia-Ucraina-e-crisi-in-Algeria

[455] Which represent the European Commissioner for Energy (edn)

gas supplies toward the Italian territory on the "Greenstream" pipeline[456] in the second half of 2014. In this context, what really concerns the Italian government and energy firms is the fact that appear quite evident that the Libyan political stability is by now compromised, according the numerous guerrilla warfare inside the country. The "Kataeb"[457] phenomenon which is investing the nation, is threating the whole country stability since the 2011 Gheddafi fall[458]. In this context, in the aftermath of the oil sector instability after 2013 institution of the "Libya Oil and Gas Corporation" by the self-proclaimed new regional government which substituted the state-controlled "National Oil Corporation", the Italian preoccupation is now moved to the gas sector[458]. Two main events have suddenly called the Italian government attention: the October 2013 "Greenstream" flux interruption, after a social protest which has stopped gas exports on the "Mellitah"[459] terminal[458]; and the October 2014 drastic supplies reduction in the same moment in which the Italian TSO "Snam Rete Gas" was asking for from 15 to 23 mcm per day[456]. While waiting to the redaction of a Constitution, today's country challenges seem to remain insuperable, according to the political fragmentation the nation is going through. A permanent civil war is destroying the country and all seems to bring Libya to a continuous conflict between local-tribal communities surrounded by the echo of religiously motived terrorism. In this scenario, at the same time in which thousands of Libyan refugees are arriving in the southern Italian coast, President Renzi has reported that "is ready to start a peacekeeping operation under the coordination of the UN"[460]. At the moment, Jordan and Turkey are welcoming tens of Libyan citizens with the intent to train them and form a kind of military or police force to contrasts violent actions in the country. Besides, during the G8 in Northern Ireland, as well Italy, France and Great Britain announced their responsibility in this training process.

Hugely diverse is the Italian approach toward alternative sources with which Italy has been trying cooperating for a long time, but that currently seems to put those relations aside. Is the Kazakh case, countries with which during the 1990s Italian interests were focused on its national large gas and oil reserves exploitation. Those previous relations was supported by the long-standing political activity between these two states, including the 2009 "Trattato di partnenariato strategico" and the adoption

[456] Sissi Bellomo. Crollano le forniture di gas dalla Libia, article on "Il Sole 24 Ore", October 14h 2014 - http://www.ilsole24ore.com/art/finanza-e-mercati/2014-10-08/crollano-forniture-gas-libia-220428.shtml?uuid=ABV56P1B

[457] Brigades, armed forces constituted locally and different for each Libyan areas (edn)

[458] Umberto Profazio. La Progressiva Frammentazione della Libia., Commentary on "Istituto per gli Studi di Politica Internazionale" (ISPI), Noveber 29th 2013

[459] Gas terminal located about 22 km east of Zwara City, which constitutes the outlet on the Mediterranean for the Greenstream pipeline - mellitahog.ly - http://www.mellitahog.ly/sites/details.php?id=8

[460] Manuela Perrone. Renzi:pronti a intervento in Libia, article on "Il Sole 24 Ore", January 10th 2015 - http://www.ilsole24ore.com/art/notizie/2015-01-10/renzi-pronti-intervento-libia-081209.shtml?uuid=AB4GTtbC&fromSearch

of various "Memorandum of Understanding" in the economic and trade field[461]. According to this, Kazakhstan has assumed a central role for Italy in the Central Asia context after the soviet era. Surely today's Italian ENI strategic position in the Kazakh territory could represent a huge help for the Italian supply security. Beyond the oil procurements question, the considerable size of the natural gas field in Karachaganak represents a huge possibility for the Italian largest energy company and for the state interests as well. 29,5% of the KPO consortium, operator that exploits the gas field, is owned by ENI, which effectively could rely on its 1,35 trillion cubic meters' bulk[462]. Meanwhile, opportunities for a diversification of the energy market are available also for Kazakhstan, which could possibly move from being only an oil large exporter to one of the largest natural gas supplier for Europe. 16 bcm are currently produced in the Karachaganak gas field, which experts estimate to become double the amount by 2020. The advent of the "Southern Corridor" could easily welcome further supplies from Kazakhstan passing through Azerbaijan, according to the intent of enlarging the "Corridor's" capacity, which could include gas coming from the discovery of other reserves in the Kazakh side of the Caspian. Trading exchanges between Italy and Kazakhstan were around 1 billion euros in 2012, relation that pose Italy the second largest Kazakh commercial partner. Two relevant issues should be taken into account in this context: a possible opposition from the Russian side of including gas supplies between Europe and a Moscow too close actor; and the Kazakhstan political stability, according to President Nazarbaev's inclination more to business than to civil rights[463] and incorruptibility.

Other important moves have been made by the Italian energy company in the international ground, possibly generating positive contributions to the Italian energy sector securitization and market expansion. The Greece Ministry of Energy has met in Milan, during the Council of Minister for Energy[464], the Italian Edison's CEO Bruno Lescoeur, and underlined the Italian position in the Greece energy market. Edison in fact actively participates in a joint venture with the Greek oil company (ELPE), owning two gas-fired plants in the Greek territory. Starting from this assumption Edison wish is to start offshore exploration rounds in Greece as well as put on practice its license to

[461] Ambasciata d'Italia ad Astana. Accordi bilaterali in vigore fra Italia e Kazakhstan - ambastana.esteri.it - http://www.ambastana.esteri.it/Ambasciata_Astana/Menu/I_rapporti_bilaterali/Cooperazione_politica/Accordi/

[462] Fabio Indeo. Prima l'energia: Ablyazov e i rapporti Italia-Kazakistan, article on "Limes – Rivista italiana di geopolitica", July 2013 - http://temi.repubblica.it/limes/prima-lenergia-ablyazov-e-i-rapporti-italia-kazakistan/50167

[463] Andrea Greco. Petrolio, mattone e banche: i business dell'Italia nel regno di Nursultan, article on "La Repubblica", July 2013 - http://www.repubblica.it/economia/2013/07/15/news/petrolio_mattone_e_banche_i_business_dellitalia_nel_regno_di_nursultan-63005708/

[464] Italy has not a Ministry of Energy. Energy ground is under the supervision of the "Ministero dell'Ambiente" (edn)

conduct research in the West Patras Gulf[465], which is supposed to contain a large amount of gas sources, by not later than mid-2015[466]. Furthermore Edison's CEO has highlighted that the company is also interested in participating in the "Interconnector Greece-Bulgaria" (IGB)[467] and in the "Interconnector Greece-Italy" (IGI)[468]. The first could give the company the possibility to enlarge their business scope toward investments in Central Europe, and implicitly helping the Italian gas system development; the second could boost gas entry flow to Italy which, if the pipeline will be constructed, could in a second moment possibly join other gas amount circulating at least in the national ground. As a witness to this consideration, Mr. Lescour added that those natural gas infrastructures will provide to Italy, Greece and the Balkans considerable access to the vast reserves of the East Mediterranean. It in fact represents a strategic opportunity for all the countries involved to make their national gas market more competitive[466] and cooperative. In this context, is quite clear that Edison intent is not to become the a vast gas trader for the Balkans and its neighbor countries, having Greece as a potential hub, but rather to become an important force in the gas transportation supporting the idea of an "East Med" pipeline construction: a project which is feasible to transport 8 bcm of offshore gas sources from Cyprus's "Aphrodite" gas field and Israel "Leviathan" gas field to Italy across Greece. In this scenario ENI-KOGAS joint venture in Israeli gas field exploration could be intended as a favorable condition for the development of this idea, as well as the inclusion of the "East-Med" pipeline into the EU "Projects of Common Interests".

In the Adriatic front instead, other possibilities are opening for some Italian energy companies. In particular, hydrocarbon exploration could soon start in Croatia, after ENI, Austrian OMV and U.S. "Marathon Oil" have obtained the license for operating in the Croatian coast with the first offshore exploration of the state. In this context, 15 of 29 exploration blocks in the area will be available for those companies' activities[469], possibly providing for part of the Balkan region energy security and, at the same time, increasing the Italian energy company foreign actions. This however represents

[465] Patras is a Greek town in the Peloponnese area - http://en.wikipedia.org/wiki/Patras

[466] Natural Gas Europe. Italian major eyes Greek gas market. October 13th 2014 – naturalgaseurope.com - http://www.naturalgaseurope.com/edison-greek-gas-market

[467] Gas Interconnector Greece - Bulgaria (IGB) is a proposed gas pipeline between the Greek and Bulgarian natural gas pipeline networks - http://en.wikipedia.org/wiki/Gas_Interconnector_Greece-Bulgaria

[468] The Interconnector Turkey–Greece–Italy (ITGI), as known as ITG Poseidon about whihc it has been discussed in the previous chapters, is a natural gas transportation project proposed in the framework of the Southern Gas Corridor. It was proposed for the transportation of natural gas from Azerbaijan's Shah Deniz gas field Phase II to markets in Europe via Greece and Italy. The Turkey–Greece pipeline was completed in 2007 while the future of the Greece–Italy pipeline project is unclear due to the competing Trans Adriatic Pipeline. - http://en.wikipedia.org/wiki/Interconnector_Turkey%E2%80%93Greece%E2%80%93Italy

[469] Natural Gas Europe. Good, bad sings from Croatis's first offshore license round, November 7th 2014 – naturalgaseurope.com - http://www.naturalgaseurope.com/good-bad-signs-croatia-first-offshore-license-round

another important dowel in the Italian ENI's gas puzzle which could help the search of alternative sources for the Italian gas sector.

In the meanwhile, Azerbaijan has decided to open its fourth "National Confederation of Entrepreneurs Organization" office in Italy, after having done it before in Turkey, Germany and Ukraine, all energy strategic positions. In this context a demonstrations of a common direction in the energy field among Italy and Azerbaijan is quite clear. As a witness to this, during a conference on the "Trans-Adriatic Pipeline" in Rome few hours before, the two countries representatives has underlined the importance of the project for both nations and for Europe. According to this approach also, trading data show that Italy is the first trading partner for Baku, accounting in 2013 for 20% of Azeri exports[470].

From the national ground instead, other positive news is: the ENI-Edison construction of the "Clara Nord West" offshore plant has been approved in September 2014. Off the coast of Ancona extraction operation will obtain 2,2 bcm per year. A 130-million euros operation led by the ENI-Edison joint venture which owns the 51% of the entire project, with the purpose to starts gas trading by the end of summer 2015. The project will enforce the Italian natural gas grid thanks to a 13-kilometer submarine pipeline which connects the plant with "Calipso", an already existent platform off the Marche region's coast. In addition, the project has convinced the EU which provided the project financing for its entire cost.

In sum, both from abroad and Italy the gas sector is taking shape especially thanks to the largest Italian energy companies, long-standing operators in a global energy perspective. It would be interesting to analyze how much can this business weigh on the Italian economy in future studies.

5.4 The LNG question

Another relevant Italian natural gas subsector has been recently posed in the spotlight, between positive aspects and critics. It is the LNG (Liquefied Natural Gas) case, which can represent the first alternative option or maybe a complementary method contributing to create a well-structured Italian gas scheme. In this sense, the Italian LNG terminal system is composed by few operational plants and many proposed projects. Those of Panigaglia (3,4 bcm/y capacity - onshore)[471], Rovigo (8

[470] Natural Gas Europe. Azerbaijan strengthens ties with Italy, October 10th 2014 – naturalgaseurope.com - http://www.naturalgaseurope.com/azerbaijan-strengthens-ties-italy

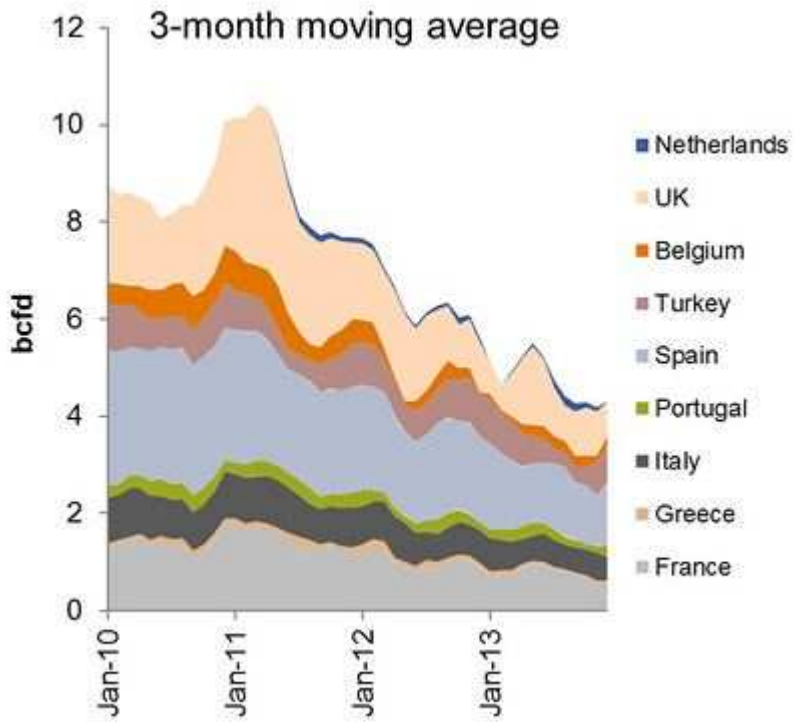
[471] GNL Italia – gnlitalia.com - http://www.gnlitalia.it/it/attivita/infrastrutture/impianto-panigaglia.html

bcm/y capacity - offshore)[472] and Livorno 3,75 bcm/y capacity - offshore)[473] are three functioning LNG terminal that the Italian territory disposes, injecting on the Italian "Snam Rete Gas" network their production even if, as we will see, the situation is more intricate than expected. In sum anyway, Italian's liquefied natural gas accounts for 8% of the total national natural gas procurement. Other projects like Falconara Maritrima (4 bcm/y authorized in 2011), Porto Empedocle (8 bcm/y authorized in 2009), Zaule (8 bcm/y authorized in 2009) and Gioia Tauro (12 bcm/y authorized in 2009) have been approved but at the moment the construction is not started yet[474]. Other complex situations have evolved in the context of the abandon, due to bureaucratic and legal complications, of the Brindisi terminal: British gas, the main investor, after that some investigations had led to 5 arrests and to discover the bribes payment, have decided to leave the project[474]. In this scenario it must be added that all the operating Italian LNG terminals are not working at full capacity: the Panigaglia terminal has sent in 2014 1,2 bcm, the Rovigo one is working half its capacity (4 bcm/y)[475], while the Livorno OLT has remained inoperative until 2015 when, in agreement with the Italian government, has started storing 100.000 cubic meters of methane in order to cope extraordinary gas needs for the nation[476]. In this sense in fact, Italy's LNG terminal utilization rate is only 45% of its capacity[477]. Under these circumstances, the Livorno plant case deserves to be described as the emblem of the LNG sector situation in Italy today. As reported above, the 2013 "Strategia Energetica Nazionale" plan has put LNG terminals as important actors into the Italian program of the energy system's expansion but, at the same time, it is still not sure that LNG terminals are concretely useful to cover part of the state's domestic daily gas demand. The lack of an adequate demand level has in fact particularly affected operations behind the OLT[478] terminal in Livorno. Italian gas demand, according to European trends, has started to drop from the moment in which the 2008 world economic crisis has reached Europe. In addition, pipeline gas's spot market prices attractiveness, due to the increasing of their competitiveness compared to oil-indexed contracts high prices, has contributed to lessen LNG traditional contracts utilization. As

[472] Edison – edison.it - http://www.edison.it/it/rigassificatore-di-rovigo
[473] OLT offshore LNG Toscana – oltoffshore.it - http://www.oltoffshore.it/il-terminale/limpianto/
[474] Pietro Dommarco. Il gas non ci serve più, article on pietrodommarco.it, September 1st 2014 - http://www.pietrodommarco.it/affare-rigassificatori/
[475] Giuliano Marrucci's interview to Federico Pontoni (IEFE researcher at Bocconi University, Milan), "Report – Il deposito", broadcasted on May 5th 2014, RAI - http://www.report.rai.it/dl/Report/puntata/ContentItem-fbd06b33-9548-4945-89bd-cb7afd04c5c2.html
[476] La Gazzetta Marittima. Scorte strategiche di gas nel terminal offshore di OLT, January 10th 2015 - http://www.lagazzettamarittima.it/?p=23331
[477] U.S. Energy Information Administration. Italy overview/data, July 2014 – eia.gov - http://www.eia.gov/countries/country-data.cfm?fips=it
[478] OLT constitutes a joint venture between three main shareholders: Iren 49,07% (Italy), E.On (Germany) 48,24%, Golar LNG 2,69% (Bermuda; UK) – oltoffshore.it - http://www.oltoffshore.it/azienda/azionistiemission/

said in fact, LNG production and transportation high costs impose to producing countries a gas trade based on onerous contracts. It should however be taken into account that, due to oil prices decreasing, which dragged with it long-term and oil-indexed contracts gas prices, have contributed to change today's market conditions. In this context, Italy has asked in 2013 10% less methane than what it was used to buy[479] in the period 2010-2011, even though more than the previous trends, but undeniably affected by gas demand decreasing, in which prices variations do not play a central role.

Fig. 7 – LNG imports to Europe



Source: BG Group

OLT finally has batten down the hatches, by refusing the clause that could have impeded to third parties entering the project since the beginning of the project, and secondly accepting the regulated regime which at the same time would have given them a "warranty clause", concerning the possibility to recover the project financing on the citizens' gas bills, whether the terminal will be

[479] Federico Rendina. Rigassificatori, una corsa a ostacoli, article on "Il Sole 24 Ore", October 23rd 2013 - http://www.ilsole24ore.com/art/impresa-e-territori/2013-10-23/rigassificatori-corsa-ostacoli-065055.shtml?uuid=AbrV0pwI&fromSearch

used or not[480]. In this vision, what it is useful to understand is the fact that market dynamics, in this case a gas demand reduction, has forced the government to change the Italian gas system's goals. If from one side an increasing of imports diversifications could imply the creation of more liquid market, giving the final consumer the opportunity to lessen their bills; from the other, gas demand decreasing and national legislation permit private energy companies to undertake initiatives in order to cover unprofitable operations. In this view, experts suggest that Italy can scarcely arrive to a moment in which Livorno LNG terminal can permit the country to sell natural gas at a lower prices than the current ones[480], without so enabling the gas prices lowering promises to come true. All the more now, the infrastructure's realization costs have reached 900 million euros, three times more than one of the most recent LNG terminal, the "Dragon LNG", which has twice the OLT capacity[481].

In this scenario, it might be highlighted that although the Italian LNG terminal system indicate to be still inefficient, the SEN[482] purposes however are those to pose Italy as one of the major European gas hub. In this sense, exploit national LNG terminal become crucial due to the large amount of natural gas needed to reach the goal. To conclude, what the Italian gas system needs is an implementations of the national networks, both pipelines and LNG terminals, in order not only to satisfy national demand, although not increasing at the moment, but also to reach a necessary amount in order to create an efficient gas grid, provided of entry/exist zones and sustained by the use of LNG terminal at their full capacity. South-to-north interconnections, both at national and European level, can enable Italy to adequately exploit national plants, which can result a successful move in order to enter the international energy arena. In this sense, if LNG terminals will be posed at the service of an expansive Italian energy strategy, they could become crucial even as a support for the Italian economy. Differently if they remain operative only for national consumption, they can result unprofitable also for the final consumers, as the Livorno terminal example has shown.

As a conclusion to this focused analysis of the Italian gas sector situation, it is quite clear that the decision over expand the national gas system have been consciously pursued by Italy since a long time, which has been highlighted as seen by the government redaction of the SEN. In this sense, today Italy is more than ever linked to gas: electricity generation plants, if working together, could reach 100.000 megawatt, twice what the countries needs at the peak period; heating methane

[480] Gionata Picchio e Antonio Sileo. Se il rigassificatore è una "cattedrale nel mare", article on "La Voce", IEFE (Centre for Research on Energy and Environmental Economics and Policy, Università Bocconi, 2013, Milan

[481] Federico Pontoni. OLT: troppo poco, troppo tardi, article on "AGI energia", August 2013 – agienergia.it - http://www.agienergia.it/Notizia.aspx?idd=1036&id=44&ante=0

[482] Strategia Energetica Nazionale (edn)

systems have been largely promoted during these last 20 years[483], as well as LNG terminal planning and construction has grown since the 2000s. As a consequence, all this will probably lead Italy to imports largest amounts of methane, even though latest national consumes data has not highlighted increasing demand trends, probably directed to support the country's aim is to become a European gas hub. LNG terminals can be useful for the national natural gas sector in order to create flexible supplies alternatives in a more global perspective, in which LNG carriers gas, coming from otherwise unreachable countries, represent a secure, even though complementary, option.

The Italian energy mix is undeniably connected to the gas and the electricity sector. Two main motivations can describe this situation, as Gian Maria Gros-Pietro, former ENI President from 1999 to 2002 and "Enterprise Economy Professor" at the Luiss University in Rome, on an interview for "Il Riformista" in 2012 suggests. First, natural gas is the most efficient fossil fuel source for the electricity generation: combined cycle-power stations' permit to produce large amount of electricity. This process includes the use of a clean source; natural gas is in fact almost totally formed by methane, which contains only one atom of carbon, compared to other more polluting fossil fuels with larger quantities of carbon. As Gian Maria Gros-Pietro report: "the Italian choice is groundbreaking both in term of efficiency and respect for the environment". Secondly, not worse than the rest of the EU and, to saying the truth, making large economic efforts in trying to develop it, especially for the final consumers, the expansion of the gas sector is attributable to the limited development of the renewables energy[484]. In addition, Italy is covering a strategic role even in the European ground: its favoured geographical position as well as the variety of its procurement sources, both from the supplier side and the diversification of the resources. The LNG could anyway represent an important source to which rely on: the presence of more diversified gas supplies permit the existence of a more flexible market, enabling the reduction of gas bills prices. In addition, the advent of the shale gas could add alternative for the Italian gas sector extension. In this view, it might be taken into account that high production costs, although they have been cut down recently, compared to lower European gas demand, represent in this sense an unstable moment even from that side[485]. Besides, LNG transportation weigh on importing countries much more than those of pipelines: LNG costs increases simultaneously to the distances traveled, to which must be added technologies and plants pressure of the LNG terminal. However, through a theoretical economic explanation, exists an "indifference point" which indicates that beyond 4/5000 km LNG

[483] Federico Rendina. Italia sempre più "gas dipendente", article on "Il Sole 24 Ore", March 2012.
[484] Interview to Gian Maria Gros-Pietro. Un mix energetico efficiente e pulito, article on "Il Riformista", March 2012
[485] See chapter 4 for more accurate details over shale gas (edn)

transportation is profitable in any case. For long distance indeed, costs increase irrelevantly compared to the convenience of the entire trading operation. In this sense so, it is finally necessary to evaluate by the Italian energy operators, if technologies evolutions and transportation costs reduction will be in some cases more favourable in the future, enabling them to prefer LNG to natural gas transported by pipelines[484], especially in a moment in which geographical obstacles or geopolitical instability will undermine the region gas procurements.

Considering the Italian advantageous geographical position, as well as the state's intents to become one of the major actors in the European gas sector, we might also pinpoint that all this hypothesis will realize only if EU energy gas market is interconnected to each other. This represent a *condicio sine qua non* which move the focus of the question on the importance of future political moves that Italy will be able to do in the European ground, as well as the EU concretely development of the "Third Energy Packages'" goals.

In this sense, other relevant issues should be taken into account in order to try understanding how future evolutions will influence the Italian and the European gas market. As a start, households and industrial sector increasing or decreasing natural gas demand can weigh on private investors profitability and public utility of further or existent supply sources or infrastructures[436]. In this vision, energy-intensive industrial sector would play a crucial role for a demand variation in the future. In the "Southern Corridor" context, Turkish economic growth will possibly change realization times of the entire project: the TANAP project development could also affect the TAP gas procurement if not constructed within the planned schedule.

From another perspective, considering the progressive decline of gas production in the North Sea, as well as the dubious possibility that U.S. shale gas revolution model could be adopted for Europe[486], the TAP role in a European context could help the European countries importations dynamics, substituting part or whole gas supplies from Northern Europe with those coming from south-east regions. In this sense, the Italian relevance as important energy actor in directing gas toward the EU territories, will increase.

Moreover, in this context, another crucial question is represented by gas selling prices. In this vision, it must be considered the price competitiveness of the gas transported via TAP and the one of LNG carriers. At the moment, LNG is not competitive in Europe, lower gas demand has brought LNG terminal to work at low capacity as previously said. However, future trends could change for the coming 5-10 years if producing countries (and especially including those of shale gas) will be able to increase efficiency, through technology and know-how evolutions, in order to boost LNG

[486] As underlined in chapter 4 (edn)

production and distribution. In this sense, as expert suggest, a good first starting point for future considerations on LNG transportation is that global LNG carries fleets are increasing all over the world.

In any case, in the TAP context, its initial contracts are not tied on old take-or-pay clauses, but rather on spot prices: in this sense a negative fluctuations of gas prices on the European gas exchange should not generate any loss for importers companies of the project, provided that gas prices trends will be favorable as in the period before the oil prices crisis.

To conclude, this all depend on previous realization and enforcement of the Italian and European gas grid, as repeatedly suggested in this chapter, as essential move for the benefit of the Italian gas sector. In addition, the development of those pipelines which compose the Southern Corridor, like TANAP, should be monitored day by day. Besides, the implementation of reverse flow pipelines, especially those situated in the north, in order to concretely connect Italian and European gas networks[436]. Actions on the policy ground, like intangible assets in order to optimize the gas sector organization, are also needed: an adequate regulatory plan, supported by the presence of multiple an well-prepared agents, is what Italy needs in order to fulfill its intent to become a gas hub for Europe, operating in an efficient, liquid and transparent market, able to compete at the price level in the European ground.

Medium-long perspectives however seems to be positive: "Terna", the Italian TSO for electricity, has reported that electricity demand[487] will increase between the end of this decade and the beginning of the next[488], in which the gas sector plays a central role. In the meanwhile, coal power plants could lose their competitive advantage[489], thanks to coal low price, but feeling the effects of a more accuracy the EU is giving to their carbon emissions, favoring so less polluting gas plants[423]. Renewable energy is also living an uncertain moment, state's subsidies have stopped since a long time, while future outlooks are not clear.

Simultaneously "Snam Rete Gas" suggests that Italian gas demand for power generation sector will slowly increase, reaching 24 billion cubic meters in 2017, touching 27 billion cubic meters in 2023[490]. In this sense, as previously supposed, the industrial sector will drag the national gas market to a new increasing trends, albeit slowly.

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[487] Most of which is produced with natural gas (edn)

[488] Terna. Fabisogno di energia elettrica in Italia – terna.it - http://www.terna.it/DesktopModules/GraficoTerna/GraficoTernaEsteso/ctlGraficoTerna.aspx?sLang=it-IT

[489] a condition or circumstance that puts a company in a favorable or superior business position (edn)

[490] Snam Rete Gas. Piano decennale di sviluppo delle reti di trasporto di gas naturale 2014-2023, February 2013 – snamretegas.it - http://www.snamretegas.it/export/sites/snamretegas/repository/file/Anno_termico_2013x14/piano-decennale/snam_piano_decennale_ita_web.pdf

CONCLUSION
Final considerations

1. EU energy dependence: a resolved question?

It is remarkable, once having taken into account what has been discussed in this work, that many analysis made by scholars and institutions, which have been long involved in the gas sector examination, have been recently posed into question due to the sudden and unexpected advent of some radical events. For this reason, many relevant supplementary considerations should be taken into account if a complete conclusion of this thesis want be done.

Some conditions, which until recent developments were supposed to be inalterable in the natural gas market, should be completely reconsidered if an adequate overview of this context wants to be well explained. In a primary view, what has long been considered to be the major cause for the recourse to a diversification policy of the EU, which is the apparently unchangeable dependence relation between Europe and some of its most traditional suppliers, has to be reshaped as it has become a secondary matter to which refer. Effectively, what was commonly accepted as the most emblematic example for understanding the particular period Europe was living recently, the Russian energy overdependence case, it is not representing a huge awkward question anymore, at least to the extent that this problem has appeared until last year. In this sense in fact, although Europe still remain subjected to its importations for 64% of its entire natural gas mix and the Russian role is not concretely changed in the European ground, the former soviet state has begun to show its weaknesses which poses in danger its long-standing hegemonic presence into the EU territory. The ruble and oil price crisis, which consequently caused a decreasing of gas prices in the Russian traditional long-term and oil-indexed gas supply contracts, has posed Moscow in an unstable position, not for its present situation in the European market, but rather in the coming years, at least until the oil prices will not recover their previous value. In this sense, experts suggest that Gazprom contract prices, signed with some of the EU member states[491], will be decreasing under the gas spot market prices[492] value, which could mean for Gazprom to include the possibility to set sales prices under the "breakeven point".

[491] As reported in the previous chapter, Italy and Germany represent the two largest European clients for Russian-Gazprom supplies.
[492] Sissi Bellomo. Mini-petrolio e consumi bassi affondano i prezzi del gas, article on "Il Sole 24 Ore", January 23rd 2014

To make things worse, other scholars add that Russian natural gas supplies toward the European territory have fallen from 318 million cubic meters in 2013 to 180 million cubic meters today[493]. In this vision the EU preoccupation toward the possibility that a sudden decreasing of gas demand, caused by extraordinary political implication in the aftermath of the Ukrainian crisis, have been rather converted into a simple EU gas demand decreasing, which in addition to oil prices and domestic currency crisis, posed the Russian Federation on an uncertain position in the international energy market. This would finally mean that coming contracts' gas prices will be aligned with the European gas stock exchange value.

Certainly, European gas market is living a particular moment: after 2008 economic crisis gas consumption has never recovered its previous trends, as this works has highlighted, and surely the expansion of renewable energy, although limited, the continued use of coal, even though slowly decreasing due to its high polluting composition, as well as the EU's opening toward welcoming new sources, as LNG, or new geographical routes, as the Caspian, has contributed to enlarge in a global scale the European natural gas market, leveling prices thanks to the increasing of the supply. What in this sense can really concern the EU is the possibility that Russia will arbitrarily further limit its gas supply to Europe in order to increase gas prices. If this alternative will come true, what was considered as a favorable period for the European gas market can reveal a complete catastrophe. Europe in fact, although has increased its energy self-sufficiency as said, could not anyway afford a drastic gas cut from its largest supplier.

On the contrary, if this option will remain only a hypothesis, Russian situation should make worse in the short period, unless oil and gas prices will grow again as said. However, it would be interesting having a look of future evolutions of the gas market in this sense, especially in this particular Russia-EU relation. If from one side other oil-indexed contracts will be signed, accompanied by an increasing of oil prices, natural gas bills will surely increase both in the wholesale market and to the final client.

In this context, the recent decision of the Russian government to stop the development of the "South Stream" project could rely on the fact that Moscow needs a rapid conclusion of new supply contracts and decided to demonstrate to the EU, through a geopolitical countermove[494], that its presence in the European territory is still needed.

[493] Bentek Energy data. Platts (2014)

[494] At the end of 2014 Russian President Vladimir Putin, has announced the abandon of the South Stream pipeline, which was supposed to direct supplies to central Europe, in favor of the development of an new pipeline supposed to pass through the Bosporus and then to Turkey.

2. The "Southern Corridor" today

It has been understood in this work that the EU-Russia enigmatic relations could resolve in favour of the Europe's member states. This means that Russia will not interfere, except with market practices of perfect competitions, on the EU intention to construct a better equipped natural gas grid in some of the pipeline-lacking European areas. The Russian Federation particular economic moment does not certainly help its energy expansionist attitude at least in the short period. Provided this, even though it can represent only a temporary relaxation, we must however notice that in some way the European actions toward the construction of a new and important corridor, connecting Azeri "Shah Deniz" gas field with Turkey and then Italy, is in progress. The "South Caucasus Pipeline", linking the Azeri reserves with Turkey is already operational; the second large segment of the "Corridor", TANAP, which will travel across Turkey, is under construction and expected to be ended by 2018. The "Trans-Adriatic Pipeline" (TAP), although all supplies contracts have been already signed providing to distribute the total amount of the Azeri gas when it will reach the Italian territory, is supposed to start its construction in 2016. However, EU confidence over the importance of those projects is very high, which makes almost certain the whole pipeline realization. In this view the "Southern Corridor" is one of the most relevant initiatives within the EU's "Project of Common Interest"[495], although the TAP will be mainly financed by foreign investors.

The major option considered in order to develop the "Corridor" is to foster the Greece-Albania-Italy segment, although other possibilities are under evaluation by the EU. The second alternative is in fact that the TANAP will be divided at the end of its route and from one side, it is supposed to proceed to the Adriatic Sea and then Italy, while from the other, has the intent to arrive to Romania, Hungary and then to Austria. The second option has been recently taken into account by the EU, even though it represents just an ongoing study[496].

What in term of international relations is relevant to pinpoint is the role of the various actors involved in this large project. A central position is certainly occupied by Azerbaijan, the country which is the largest and unique supplier of the "Corridor". Good relations between the Azeri government and the EU is necessary in order to institute a long-lasting cooperation that possibly can favour future partnerships in the energy sector, also considering if other gas fields in the Caspian

[495] European Union. Project of Common Interests (PCI), Europe.eu - http://ec.europa.eu/energy/sites/ener/files/documents/2013_pci_projects_country_0.pdf

[496] European Union. Project of Common Interest, List of actions selected for receiving financial assistance under CEF-Energy as of 21 November 2014, pag.4 – Europa.eu - http://ec.europa.eu/energy/sites/ener/files/documents/20141121_cef_energy_lists.pdf

will be discovered. It is necessary to notice however that the "Shah Deniz" consortium, which is conducting exploitation and production activities in the Caspian basin gas field, is mostly controlled by the European-English British Petroleum, which occupies a central position in this context, also in the political ground.

In addition, the Nagorno-Karabakh confrontation is at the stake, long-standing conflict resolutions have not yet found any positive developments and, for this reason, future strategic moves can bring EU and Azerbaijan to reclaim the question. In this sense further political approaches for the parts, in order to prevent complications in the energy cooperation ground, are needed.

Besides, another crucial actor's role is to be taken into account in the "Southern Corridor" context. Turkey in fact is a key player in its position of transit country that permits the Azeri gas to enter the European territory. The TANAP pipeline represents a central project for the future EU gas procurements, thanks to which Ankara had increased its geopolitical relevance inside the European Union, although not being yet one of its members. For this reason, in fact, its long discussing membership can be reconsidered. Certainly, whether or not Turkey will become soon an EU member state, its geopolitical presence in south-east Europe is central. In this sense, careful political relations should be undertaken in order to avoid future gas cuts or setbacks, even though sudden gas transmission interruptions will not be profitable for anybody, and especially for Turkey and Azerbaijan[497].

In this sense furthermore, the necessity of Ankara to increase its energy security level is another clue that might us think to the scarce possibility the Azeri gas will not arrive to Europe, unless EU or Italy will decide to lessen the amount of natural gas supplies. In this vision, the Turkish government as well as state-controlled energy companies and local TSOs, are not interested in decreasing pipelines supplies. Turkey in fact needs large amount of natural gas in order to reach its goal to become energy self-sufficient and possibly a gas hub for the area, including for Europe. It is important to underline additionally that Turkey has recently welcomed the latest Russian purpose to construct a pipeline that, passing through the Bosporus, will reach the Turkish territory. This project in fact constitute the redirection of the "South Stream" pipeline and, from one side contributes to increase Ankara's energy security but, from the other, it effectively has become a huge competitor of the EU-supported "Southern Corridor", as possible gas supplies might be directed to the south-east Europe states. Considering this, it would be necessary to make further investigations on how much this new route of the "South Stream" could affect the "Corridor's" efficiency, taking

[497] The Azeri state-controlled SOCAR has in almost all pipelines composing the "Southern Corridor" the higher participation percentage.

especially into account how much prices in the final wholesale market can differ if coming from one pipeline or the other, as well as the EU reaction to this new pipeline construction.

To conclude, in this context Italy's position is increasingly becoming more relevant. As highlighted by the "Strategia Energetica Nazionale" (SEN) redaction, the Italian government purpose is to make Italy a benchmark for the European natural gas network. This aim is well supported by the EU, according to the European Investment Bank financing of the Italian gas network expansion[498]. To enlarge the national natural gas grid represent in fact for Italy an urgent issue, making it better communicating due to the implementation of existing infrastructures. If the Rome aim's to become a natural gas hub, enabling Italy to transfer gas through a well-structured north-south pipeline network and creating reverse flow entry/exit zone for its major pipelines directed to foreign countries, large moves in term of political decisions and concrete operative actions are needed. As a witness to this possibility, as experts suggest, North European gas procurements are slowly coming to an end and, in this hypothesis, south-east European countries can become crucial actors in order to sustain future European gas supplies. Effectively, the successes of the "Southern Corridor" represent for Italy a vital question, if the SEN purpose wants to be fulfilled.

In addition, to adequately develop the domestic LNG terminals system could represent a further breakthrough for the Italian energy sector. If in fact future large possibilities to become a relevant gas supplier will become reality, this additional support can contribute to enlarge the domestic sources, enabling Italian operators to become more competitive in term of sale prices. In this sense, a cost-benefit analysis, considering LNG high costs, is needed in order to better exploit this complementary asset. Import in order to export is a key move for the future of the Italian gas sector, of course provided that enough supplies will satisfy domestic demand.

3. Future perspectives

Looking to the current situation of the European and Italian natural gas scarce production, as the EU research of sources diversification has recently highlighted, what should be taken into account in this sense is to create an efficient natural gas network in order to greet secure foreign supplies. In this vision, the "Southern Corridor" favorable geographic position can be taken as one of the most advantageous condition that the EU disposes in order to cope internal insufficient production. For

[498] European Investment Bank. Snam Rete Gas Infrastrutture II; RETE GAS INFRASTRUTTURE III; RETE GAS INFRASTRUTTURE IV; Joint EIB/CDP loans to Snam for two new gas pipelines – eib.org

this reason, provided that the full segments composing the "Corridor" will be soon constructed and that an expansion of the project capacity will be done, as well as that south-east Europe demand will increase, further efforts should be directed to include additional gas amounts for the project. If from one side EU relations are still much difficult with other Caspian states, such as Turkmenistan or Kazakhstan, on the other, the possibility to involve Israel, Cyprus or other Middle East states like Iran, seems to be possible in the near future. In the first case more efforts are needed in the political ground: to enforce relations with Israel and Cyprus in order to individuate a concrete itinerary to permit their natural gas reserves to reach the "Corridor", either through Greece and Italy or through Turkey, provided that Turkish-Cypriot tension will be lessened, will be necessary to develop this option. In addition, the lack of local investments and infrastructures in upstream activity at the moment are slowing down the developments of a possible linkage between those regions.

In the second option, certainly Iran represents a huge actor, considering its recent large natural gas discoveries in the Persian Gulf. In this vision as well as for Cyprus and Israel, a political approach is needed in order to face Iranian domestic political instability and to remove latest EU-USA sanctions. However, especially in this case, the question cannot be resolved very soon, as the Islamic state expansion is undermining the area, but future positive developments can be taken into account, considering that Turkey is already importing natural gas from northern Iran.

In addition, other relevant alternatives, although unlikely to be included in the "Southern Corridor", but anyway representing supporting methods in order to cope south-east European energy insecurity, is what has been largely discussed in the last part of this thesis: the role of LNG and Shale Gas. Both issues anyway are strictly connected to each other since unconventional gases, especially if coming from farer countries, are usually liquefied in order to be transported[499]. In this context, LNG is already reaching Europe and especially Italy, even though south-east Europe LNG terminals are lacking or not fully exploited, as the Italian case shows. LNG supplies from North Africa are an important complementary method to support EU and, in the "Southern Corridor" context, Italian gas procurements, although the recent decreasing of European natural gas demand has affected its LNG terminal system[500] activity. In terms of unconventional gases, the "Shale gas revolution" which mainly invested the United States, although fixed costs have been reduced, which permitted not to sell natural gas under market prices as was happening lately, made possible by infrastructures and know-how increasing[501], there is still a long way to go in order to become

[499] An to enable producing countries to transport larger amounts (see chapter four)
[500] As the OLT LNG terminal in Livorno inoperative moment is showing (see chapter five)
[501] As Leonardo Maugeri has reported (see chapter four)

competitive in the global natural gas market. In this sense, recent oil crisis, and consequently gas prices fall[502], accompanied by a European lower demand has not permitted to the American gas to reach the European territory, favoring Asian routes for their gas sales, where the gas prices to the final client is higher.

Another consideration should be dedicated to the North Africa, some states of which is recently living national political instability but, at the same time, a huge increase of energy domestic demand is taking place. In this sense, given that most of the EU energy companies have been operating for a long time in the southern Mediterranean regions, large investments and actions are needed in order to cope national demand needs as well as enable them to export to the EU exciding gas amounts. In this vision, together with conservative actions in order to preserve the already existing pipelines grid toward the European territory, in which foreign policy play a central role, further efforts should be done in exploration activities by European energy companies which dispose of investment capacity, contributing at the same time to support local economy and satisfy energy increasing demand.

To conclude, huge efforts on the political ground should be made in order to involve more actors: from one side in the "Southern Corridor" context, directed to support future project capacity enlargement and to exploit neighbors rich-energy states; from the other, outside it, in order to support pipelines gas procurements with alternative sources, giving more attention of the LNG market which can enable the EU to find further procurements from farer regions. In this scenario the EU legislative action is well structured, as in this work has been explained. Many institutions and authorities at the EU level are working in order to construct an efficient, cooperative and unified natural gas market[503]. Some policies, sometimes interfering with non-European companies or states interests, have been carried forward with the conviction of the possibility to create a communitarian energy market, more directed to favour the work of EU actors rather than unconditionally follow market-competitive rules[504], which probably would have penalized them.

Accompany with this, which can be briefly synthetized as the EU intention to favour the creation of a natural gas market at the European level, it is necessary to be aware of the challenges which the current fragmented European gas market is going through. If from one side national plants and infrastructures are efficient and well organized, from the other, the creation on the domestic ground of independent gas network has permitted to divide in many different areas the European gas

[502] At least in those long-term contracts indexed on the oil prices
[503] As underlined in chapter two
[504] See Russia-EU discussion over the "South Stream" development

market, mainly affecting and diversify the final gas price from zone to zone. Even though at the moment prices are not bothering European gas market operators, experts suggest that anyway they soon could increase, reaching the level of two years ago. In this sense, a more European market is needed, both in term of infrastructures cohesion and in the cooperative ground on the companies and states side. The three “energy packages” redaction is representing still today the prove that the EU is searching for energy market integration, the “Southern Corridor” construction could represent in this view another important piece of the puzzle that is taking shape for a communitarian energy sector creation. Certainly this represent for Italy a huge challenge but at the same time a great opportunity to become a gas hub for Europe. However a long-term plan in order to implement and improve infrastructures, although domestic demand is not increasing, represents a complex question for the Italian government. In this scenario it is also relevant to evaluate how global natural gas prices will change in the coming years in relations to the Italian government intention to supplies large gas amounts outside its borders, and so considering how much Italian gas could be competitive in a European context. In this context, if all the pipelines composing the “Corridor” will be realized, if the Italian gas grid will be implemented and opened to the foreign markets and if the European gas demand will justify this actions, this could be a huge possibility for Italy to exploit its long-standing experience in the natural gas sector, bringing benefits for the country’s economy as well.

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