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The Impacts of the Proposed Nabucco Gas Pipeline on EU Common Energy Policy

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The European Union (EU) common energy policy top priority is to diversify energy supplies by strengthening and enhancing its partnerships with the energy transit countries, thus reducing dependency, especially on Russia, for the oil and gas. The proposed Nabucco gas pipeline, which is expected to be finished in 2014, will bring gas from the Caspian region, the Middle East, and Egypt to Central Europe and passes through Turkey, Bulgaria, Rumania, and Hungary, ending at Baumgarten, close to Vienna. As well as providing gas for Europe it will boost political stability and social and economic development in the transit and supply countries. Based on the literature, secondary data and analysis, this article will explore and discuss the impacts of the proposed Nabucco gas pipeline on the EU.

Keywords: energy policy, Nabucco, natural gas

1. INTRODUCTION

The growing European Union (EU) energy demand has pushed a common energy policy to reduce dependence on Russian gas and to diversify energy resources and links. The expansion of natural gas as an environmentally clean energy source is widely seen as the key factor in the next two decades (Stern, 2006).

The world's natural gas reserves are located in the Middle East and Eurasia. Russia holds an estimated 45 trillion cubic meters (tcm) at end of 2007 with Iran holding 28 tcm, and Qatar holding 26 tcm. Together these three countries account for around 57% of the world's natural gas proven reserves of 177 Tcm. If the production rate at end of 2007 remains constant, the world's known reserves would last for 60 years (BP, 2008).

Natural gas is transported between countries either through pipelines or by shipping in the form of liquefied natural gas (LNG), depending on the distance and transport volume. For distances longer than 3,000–5,000 km, shipping LNG is more economical than pipelines (depending on the pipeline diameter and pressure; Remme et al., 2008). Internationally up to 23.3% of total gas produced volume was transported via pipelines in 2008, while LNG trade was 7.4% (Cedigaz, 2009). The main gas exporting countries are within 4,500 km of the EU and most of the natural gas imports are transported through pipelines (Umbach, 2010). There are many pipeline projects

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already being implemented but the recent gas crisis between Russia and the Ukraine in 2008 raised the possibility of the implementation of the EU flagship Nabucco gas pipeline which had until January 2009 been sidelined. This article will discuss the impacts of the proposed Nabucco pipeline project on the EU. Firstly it will summarize the EU climate and energy challenges, and the common energy policy set to overcome them. Then it presents the proposed Nabucco pipeline project details and the obstacles undermining its implementation. Thirdly it will present the current debate around the pipeline implementation before finally analyzing the impacts of the pipeline implementation on the EU.

2. EU NATURAL GAS POSITION

EU natural gas consumption (Figure 1) has increased over the last decade except in the last 2 years when it declined by 1.6%. This was due to the warm winter weather conditions corresponding to a decline in production (Figure 1). However, this decline is not indicative of a future reduction in gas dependency as natural gas has lower CO_2 emissions compared to other fossil fuels. Along with the current world economy downturn, natural gas is comparatively more economical than oil. As a consequence, natural gas will remain a key energy source in the industrial sector and electricity generation. International Energy Outlook 2009 projections for global natural gas consumption are to increase from 104 tcf in 2006 to 153 tcf in 2030 (EIA, 2009a).

EU domestic production of gas is in the Netherlands and the United Kingdom which satisfies about two-fifths of EU domestic consumption needs. Further gas is imported from four main suppliers: Russia, Norway, Algeria, and Nigeria (BP, 2008). In 2007, trade movement by pipeline was dominant by Russia's gas exports to the EU (Table 1).

3. EU COMMON ENERGY POLICY

The EU targets a low-consumption economy based on more a secure, more competitive, and more sustainable energy supply. However, the EU faces serious energy challenges concerning sustainable development and climate change mitigation as well as security of supply, import dependence and the competitiveness and effective implementation of the internal energy market.

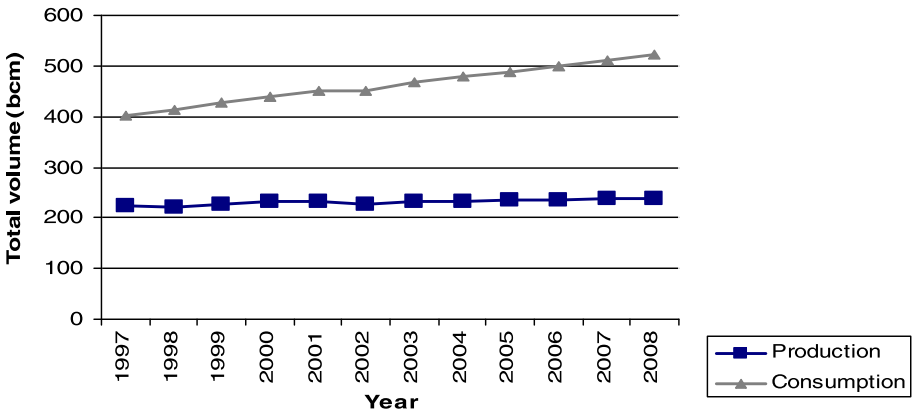

FIGURE 1 EU gas production and consumption [billion cubic meters (bcm)]. (color figure available online)

TABLE 1
Trade Movements 2007 by Pipeline (Billion Cubic Meters)

	From																						
To	*US*	*Canada*	*Mexico*	*Bolivia*	*Other Latin America*	*Belgium*	*Germany*	*Netherlands*	*Norway*	*United Kingdom*	*Russian Fed.*	*Turkmenistan*	*Other Europe & Eurasia*	*Iran*	*Oman*	*Qatar*	*Algeria*	*Egypt*	*Libya*	*Indonesia*	*Malaysia*	*Myanmar*	*Total Imports*
North America																							
US	—	107.30	1.60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	108.90
Canada	13.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.20
Mexico	8.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.81
S. & Cent. America																							
Argentina	—	—	—	1.85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.85
Brazil	—	—	—	9.88	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.00
Chile	—	—	—	—	2.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.38
Others	—	—	—	—	0.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19
Europe																							
Austria	—	—	—	—	—	—	1.10	—	0.78	—	5.60	—	—	—	—	—	—	—	—	—	—	—	7.48
Belgium	—	—	—	—	—	—	1.60	7.10	9.50	0.64	0.50	—	—	—	—	—	—	—	—	—	—	—	19.34
Bulgaria	—	—	—	—	—	—	—	—	—	—	3.10	—	—	—	—	—	—	—	—	—	—	—	3.10
Croatia	—	—	—	—	—	—	—	—	—	—	0.70	—	0.10	—	—	—	—	—	—	—	—	—	0.80
Czech Republic	—	—	—	—	—	—	—	—	2.20	—	6.43	—	—	—	—	—	—	—	—	—	—	—	8.63
Finland	—	—	—	—	—	—	—	—	—	—	4.30	—	—	—	—	—	—	—	—	—	—	—	4.30
France	—	—	—	—	—	1.90	0.10	8.92	15.11	0.10	7.63	—	—	—	—	—	—	—	—	—	—	—	33.76
Germany	—	—	—	—	—	—	—	19.13	23.74	2.90	35.55	—	2.40	—	—	—	—	—	—	—	—	—	83.72
Greece	—	—	—	—	—	—	—	—	—	—	2.89	—	—	—	—	—	—	—	—	—	—	—	2.89
Hungary	—	—	—	—	—	—	0.83	—	—	—	7.85	—	1.80	—	—	—	—	—	—	—	—	—	10.48
Ireland	—	—	—	—	—	—	—	—	—	4.15	—	—	—	—	—	—	—	—	—	—	—	—	4.15
Italy	—	—	—	—	—	—	1.50	6.11	8.99	0.75	23.80	—	—	—	—	—	22.10	—	9.20	—	—	—	72.45
Latvia	—	—	—	—	—	—	—	—	—	—	1.60	—	—	—	—	—	—	—	—	—	—	—	1.60
Lithuania	—	—	—	—	—	—	—	—	—	—	3.40	—	—	—	—	—	—	—	—	—	—	—	3.40
Luxembourg	—	—	—	—	—	0.80	0.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.50

(*continued*)

TABLE 1
(*Continued*)

	From																					
To	*US*	*Canada*	*Mexico*	*Bolivia*	*Other Latin America*	*Belgium*	*Germany*	*Netherlands*	*Norway*	*United Kingdom*	*Russian Fed.*	*Turkmenistan*	*Other Europe & Eurasia*	*Iran*	*Oman*	*Qatar*	*Algeria*	*Egypt*	*Libya*	*Indonesia*	*Malaysia*	*Myanmar*	*Total Imports*
Europe																							
Netherlands	—	—	—	—	—	—	5.50	—	7.00	1.82	2.30	—	2.24	—	—	—	—	—	—	—	—	—	18.86
Poland	—	—	—	—	—	—	0.80	—	—	—	6.20	—	2.30	—	—	—	—	—	—	—	—	—	9.30
Portugal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.39	—	—	—	—	—	1.39
Romania	—	—	—	—	—	—	1.30	—	—	—	2.50	—	1.00	—	—	—	—	—	—	—	—	—	4.80
Serbia	—	—	—	—	—	—	—	—	—	—	1.90	—	—	—	—	—	—	—	—	—	—	—	1.90
Slovakia	—	—	—	—	—	—	—	—	—	—	5.80	—	—	—	—	—	—	—	—	—	—	—	5.80
Slovenia	—	—	—	—	—	—	—	—	—	—	0.56	—	0.10	—	—	—	0.44	—	—	—	—	—	1.10
Spain	—	—	—	—	—	—	—	—	2.15	—	—	—	—	—	—	—	8.80	—	—	—	—	—	10.95
Sweden	—	—	—	—	—	—	0.15	—	—	—	—	—	0.96	—	—	—	—	—	—	—	—	—	1.11
Switzerland	—	—	—	—	—	—	1.20	0.60	0.18	—	0.35	—	0.65	—	—	—	—	—	—	—	—	—	2.98
Turkey	—	—	—	—	—	—	—	—	—	—	23.15	—	1.28	6.16	—	—	—	—	—	—	—	—	30.59
United Kingdom	—	—	—	—	—	1.80	1.60	8.20	16.40	—	—	—	—	—	—	—	—	—	—	—	—	—	28.00
Others	—	—	—	—	—	—	—	—	—	—	1.42	—	—	—	—	—	—	—	—	—	—	—	1.42
Middle East																							
Iran	—	—	—	—	—	—	—	—	—	—	—	6.10	—	—	—	—	—	—	—	—	—	—	6.10
Jordan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.35	—	—	—	—	2.35
United Arab Emirates	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.95	0.80	—	—	—	—	—	—	1.75
Africa																							
Tunisia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.30	—	—	—	—	—	1.30
Asia Pacific																							
Singapore	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.39	1.78	—	7.17
Thailand	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.89	9.89
Total Exports	22.01	107.30	1.60	11.73	2.69	4.50	16.38	50.06	86.05	10.36	147.53	6.10	12.82	6.16	0.95	0.80	34.03	2.35	9.20	5.39	1.78	9.89	549.67

Sources: BP Statistical Review of World Energy, 2009; Cedigaz (provisional).
Notes: Flows are on a contractual basis and may not correspond to physical gas flows in all cases.
Data excludes trade within the Former Soviet Union and United Arab Emirates.

The 2007 EU common energy policy set objectives to overcome these challenges to ensuring the competitiveness of the internal energy market and the availability of affordable energy, reducing greenhouse gas emissions, ensuring security of supply, and the agreement of the EU Member States to speak with a single voice on the international stage (European Commission, 2007b). In 2008, the EU launched the second strategic energy review, where the Energy Security and Solidarity Action Plan were placed with a main priority to ensure sustained security of supply to Europe. The approach for addressing the security of supply is through

1. promoting energy efficiency, which has the potential for demand reduction;
2. promoting the development and the deployment of the renewable technologies to reduce the dependence on imported energy;
3. strengthening the cooperation agreement with third countries, in particular the energy suppliers to Europe, and transit countries through international and bilateral agreements and financial instruments;
4. developing the essential infrastructure for the EU's energy needs and for the diversification of energy supplies;
5. improving oil and gas stocks and crisis response mechanisms (European Commission, 2008).

Moreover, the EU climate targets are reducing greenhouse gas emissions by 20%, increasing the share of renewables in the total energy consumption to 20%, and improving energy efficiency by 20%, all of it by 2020.

3.1. EU Security of Supply Strategy

The security of supply is one of the top priorities for the EU common energy policy. In particular, reducing the gas import dependency from Russia due to the gas crisis of 2006 (that happened because of a shortage of gas production in Russia and an increase in its domestic demand which left it unable to meet the exports obligations) and recently in December 2008 (due to its gas pricing dispute with Ukraine) leaving thousands of EU households without heat in severe winter weather conditions (European Commission, 2008). Furthermore, Russia is facing an emerging gas crisis due to its growing domestic demand despite having the world's proven reserves. Russia has increasingly become dependent on gas imports from Central Asia and the Caspian region (60–80 bcm) in order to satisfy domestic gas consumption and to maintain high priced exports to Europe. At present, one-third of all European gas imports from Russia come from Central Asia (Umbach, 2008). Moreover, gas price volatility and price rises are affecting the EU economies, and with the growing global energy demand and concentration of gas supply reserves, this is threatening the security of the gas supply to Europe (European Commission, 2008).

Therefore, the infrastructure instrument, notably cross-border infrastructures, have a significant role in energy dependence mitigation and diversity of supplies. The EU is working to improve the infrastructure required to transport energy as efficiently as possible to where it is needed. EU legislation aims to make the market accessible for all suppliers through modification and synchronization of the market rules to encourage new investments and eliminate barriers to cross-border trade. Meanwhile, the EU is financing 25 million Euros yearly for supporting electricity and gas transmission infrastructure projects for the EU interest (European Commission, 2008).

A number of infrastructure developments are recognized as energy security priorities:

- "Development of a Baltic interconnection plan, better linking the region with the rest of the EU, improving the security and diversity of its energy supply, enabling solidarity;

- Development of a Southern Gas Corridor for supply from Caspian and Middle Eastern sources and possibly other countries in the longer term, improving security of supply;
- As LNG is now contributing to the diversity of gas supply, sufficient capacity should be available to all Member States, either directly or through other Member States on the basis of solidarity arrangements; particularly important for the Member States which are currently overwhelmingly dependent on a single gas supplier; an LNG Action Plan is to be considered;
- Completion of a Mediterranean energy ring, linking Europe with the Southern Mediterranean through electricity and gas interconnections to improve energy security and to help develop the vast solar and wind energy potential;
- Development of North-South gas and electricity interconnections within Central and South-East Europe, building on the Energy Community inter alia, supporting the national energy regulators and Transmission System Operators;
- Development of a blueprint for a North Sea offshore grid, interconnecting national electricity grids and plugging in planned offshore wind projects." (European Commission, 2008)

Despite the targets regarding the development and deployment of low carbon technologies for energy generation, and energy efficiency for reducing the dependency on imported energy, this will not eliminate the need for imported fuel, especially natural gas, in the future. The EU dependency on imported energy is increasing. Gas imports represented around 57% in 2005 and are expected to increase to 84% by 2030, due to the increase in the energy demand (European Commission, 2008). Pipelines are expected to be the most dominant means of gas transport in Europe at around 83% of the transport capacity in 2030 (European Commission, 2007a). In fact, this may increase the overall flexibility of the system through increasing the number of external suppliers to include Libya, Egypt, Qatar, the Caspian countries, Iran, and Iraq, and at the same time to increase the number of transport routes and to reduce the need of transit through non-EU Member States. Several of the projects have already been implemented or are about to be implemented, like various LNG facilities and storage sites, pipeline connections between Libya and Italy, Iran and Turkey, Azerbaijan and Turkey, and Turkey and Greece. Another project, which is at an advanced stage of development is the Italian-Greece interconnector, while the pipeline link between Iraq and Turkey seems more far-fetched under the current political environment (Kjärstad and Johnsson, 2007).

Further proposed pipelines are in Table 2. Although the Nabucco pipeline is considered as the most important EU natural gas transport infrastructure for security of supply, it has not been legally approved for implementation.

TABLE 2
Proposed Gas Pipeline Projects to Europe

Project	*Supplier*	*From*	*To*	*Capacity, bcm*	*Start-up*
Medgaz	Algeria	Hassi R'Mel	Spain	8 to 10	End 2008
GALSI	Algeria	Hassi R'Mel	Italy	8 to 10	2009–2010
ITG-IGI	Caspian	Greece	Italy	8 to 10	2011
Nord Stream	Russia	Vyborg	Germany	2X27.5	2010
Langeled	Norway	Ormen Lange	UK	22 to 24	2006–2007
Nabucco	Caspian	Turkey	Austria	25 to 31	2010
Total supply capacity to Europe				98.5 to 140	

Source: European Commission, 2007.

TABLE 3
The Nabucco Distribution

Country	*Length, Km*
Turkey	2,000
Bulgaria	400
Romania	460
Hungary	390
Austria	46

Source: Nabucco, 2009.

4. THE NABUCCO PIPELINE

The Nabucco pipeline project was first proposed by the European Commission in 2002 as an EU flagship project that would unite the EU Member States and diversify sources of gas supply. However, since then, it is facing serious obstacles due to the EU Member States conflict regarding political, shortage of supply, economic, and infrastructure competition issues which delay the pipeline implementation. It proposes a gas pipeline of approximately 3,300 km starting at the Georgian/Turkish and/or Iranian/Turkish border and finishing at Baumgarten in Austria. It will run via Turkey, Bulgaria, Romania, and Hungary with asymmetrical length distribution (Table 3), and aims to connect Europe with the Caspian region (Azerbaijan, Turkmenistan, and Kazakhstan), the Middle East (Iran, Iraq), and Egypt (Figure 2). It is designed to transport a maximum capacity of gas of 31 bcm per year. The Nabucco Shareholders are RWE (Germany), OMV (Austria), MOL (Hungary), Transgaz (Romania), Bulgarian Energy Holding (Bulgaria), and Botas (Turkey) with each holding an equal share of 16.67% of Nabucco Gas Pipeline International GmbH.

Estimated investment costs including financing costs for a complete new pipeline system amount to approximately 7.9 billion Euros. The consortium partners will finance 30% of the total investment equally shared, and 70% will be provided by international institutions such as the European Investment Bank or the European Bank for Reconstruction and Development in addition to agencies and banks that support exports in different supplier countries. The pipeline is

FIGURE 2 Proposed Nabucco Pipeline route (Used with permission of NABUCCO Gas Pipeline International). (color figure available online)

scheduled to begin operating in 2014; construction will be held over two phases starting with an 8 bcm per year maximum capacity at 2011, and with expectations for phase II to be completed by 2016 (Nabucco, 2009).

4.1. Political Concerns

The pipeline has been criticised for being a risk since it will be supplied from Central Asia and Middle East countries where they suffer from political instability (such as Iran and its nuclear dispute due to its nuclear fuel enrichment programe) and Iraq. In the Caspian region, the Georgia crisis has enhanced the suspension of the Nabucco, since Georgia is currently considered as an unsafe energy transit country in the Caspian region for linking Azerbaijan and Turkmenistan to Europe (Turkey) through the South Caucasus pipeline (EER, 2008). Furthermore, the large number of transit countries may emerge a complicated planning and construction process (Remme et al., 2008).

4.1.1. Turkey's Position

Turkey's gas consumption is increasing rapidly, from 3.43 bcm in 1990 to 26.9 bcm in 2005, reaching 35.1 bcm in 2007 (BP, 2008; EIA, 2009b). This is due to its improved economy in recent years, population growth, rapid urbanization, and industrial development (Ozturk, 2005; Sozen and Arcaklioglu, 2007). Turkey's natural energy resources are lignite, coal, biomass, and geothermal, with limited oil and natural gas reserves potential, that force it to depend on Russia for around 65% of its gas imports, which affects meeting the demand in case of a gas crisis between Russia and Ukraine. Therefore, Turkey's energy policy preferred natural gas as a fuel for the future domestic growing consumption and market trading. With an objective of reducing dependency on Russia by finding new sources and routes, it has signed gas import agreements with the world's highest gas reserves nations including Iran, Iraq, Russia, Turkmenistan, and Egypt (Hacisalihoglu, 2008). Apart from the long-term contracts (Table 4), Turkey launched a Natural Gas Market law in 2001 intending an independent regulatory and supervisory system through liberalized natural gas markets for reinforcing financial stability and competitive and transparent markets to encourage foreign investment in gas infrastructure.

TABLE 4
Turkey's Natural Gas Supply Long-term Contracts

	Total Volume, bcm/Year	*Duration, Years*	*Start Year*	*End Year*
Russian Federation	6.0	25	1987	2011
Algeria	4.0	20	1994	2014
Russian Federation	8.0	23	1998	2021
Nigeria	1.2	22	1999	2021
Iran	10.0	25	2001	2025
Russian Federation	16.0	23	2002	2025
Azerbaijan	6.6	15	2006	2020
Turkmenistan	16.0	30	2006	2035
Total	67.8			

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Turkey's geographical location is playing an increasingly important role in the transit of oil and gas supplies from Russia, Caspian region, Middle East, and North Africa to the EU. Turkey is linking Southeastern Europe and Southwestern Asia, bordering the Black Sea, between Bulgaria and Georgia, and bordering the Aegean Sea and the Mediterranean Sea, between Greece and Syria (CIA, 2009). Turkey is attempting to benefit financially, politically, and socially from this strategic location. Turkey requires a high transit tariff, more than the other transit countries, since 60% of the Nabucco pipeline will occupy its land. In addition, Turkey is seeking the right to buy and sell the gas entering the Nabucco pipeline. This is to ensure the security of gas supply for its growing domestic demand. Moreover, Turkey is using its significant energy transit position in the Nabucco to exert pressure for obtaining the EU accession. Turkey has been criticized by the EU "to be more than a transit country" (Mortimer, 2009).

4.2. Shortage of Supply

There is uncertainty about insufficient gas supply from the Nabucco gas suppliers (Azerbaijan, Iraq, Turkmenistan, and Iran) to meet the full capacity of the pipeline by 2020. Even then it will still be providing less than 10% of Europe needs (Charter, 2009). Despite the fact that these countries have large proven gas reserves they suffer from a lack of gas extraction and connections infrastructure. Furthermore, North Africa may have a limited supply due to its growing domestic gas requirements (Stern, 2006). As a consequence, there is reluctance by the EU and the private sector in the decision for funding the project.

4.2.1. Azerbaijan

Azerbaijan is expected to be the main gas supplier to the Nabucco pipeline since it is the most politically stable country in the Caspian region and the Middle East. In addition, it has an existing link to Europe at Turkey through the South Caucasus pipeline, with a transmission capacity of 6.5 bcm per year. It is interested in supplying the Nabucco pipeline since it will sell the gas at world gas prices, which in turn will provide higher revenues. In addition, it will enhance its diversified gas exporter's portfolio. Azerbaijan has estimated proven natural gas reserves of 1.28 tcm at the end of 2007. It is willing to export gas to Europe from its major natural gas field, Shaz Deniz II, which is scheduled to be operating by 2016 with a total production capacity of 16 bcm per year. However, the gas that will be available for export is around 4 bcm due to domestic consumption. The Shaz Deniz I gas production is totally sold to Turkey and Georgia at an average of 6 bcm per year. Therefore, the Azerbaijan gas exported to the EU will be around 8–9 bcm, most of which is currently being sold to Turkey who is expected to resell it to the EU (BP, 2008; Mavrakis et al., 2006; Remme et al. 2008; EIA, 2007).

4.2.2. Turkmenistan

Turkmenistan is the largest gas producer in the Caspian region. It has 2.67 tcm estimated natural gas proven reserves (BP, 2008). The country is a natural gas net exporter, producing 67.4 bcm and consuming domestically 21.9 bcm (BP, 2008). A small amount of gas (6.10 bcm) is currently exported to Iran and around 39 to 48.1 bcm to Russia (IEA, 2008; BP, 2008). Turkmenistan's high export capacity is expected to increase and could be a decent supplier to the Nabucco pipeline. However, the EU may find a high-purchase competitor in China, since it has signed a 30 year sale-purchase agreement with Turkmenistan to import 30 bcm per year with aspirations to be 40 bcm per year (IEA, 2008). In addition there is the associated problem with the supply route from Turkmenistan to Turkey since the gas export has to pass through Georgia.

4.2.3. Iran

Iran has the second-largest world gas proven reserves after Russia. However, it is a net gas importer from Turkmenistan. This is due to a lack of gas fields infrastructure and the fact that many international energy companies such as Shell, StatoilHydro, and Repsol are backing out of development investment in Iran due to the country's political instability (IEA, 2008). Iran may be the largest supplier to the Nabucco pipeline unless international and domestic political issues are resolved.

4.3. Economic Concerns

Institutions such as the World Bank and governmental funding will make up 70% of the investment. However, the uncertainties around gas supplies and politically-related issues have put the project implementation under risk which in turn affected the decision in funding the project.

4.4. Russia's Competition

Russia is attempting to undermine the Nabucco pipeline, since this pipeline will affect its economy, of which the gas exports represent around 80%. It is strengthening its relationship with the Central Asian countries of Azerbaijan, Turkmenistan, and Kazakhstan, which will be the main suppliers to the Nabucco pipeline, and with a number of gas exporting countries (such as Iran, Qatar, and North African countries) to the EU member states by offering to buy all their gas exports to Europe at European gas prices (Umbach, 2010). In addition, Russia has doubled the price it pays for gas import from the Caspian region over two years. In 2006, Turkmenistan was receiving USD $60 per thousand cubic meters (thcm) for gas exports delivered at the Turkmenistan border. From the last quarter of 2006 the price paid by Russia increased to USD $100/thcm, then to USD $130/thcm in the first half of 2008, and to USD $150/thcm in the second half of 2008 (IEA, 2008). Moreover, Russia's Gazprom—which controls around 70% of Russia's gas production and exports—appears to be building a new pipeline (the South Stream pipeline) along the same route of the Nabucco pipeline to avoid the dependence on the Ukraine as transit country. Also, Gazprom is planning to extend its existing free capacity Blue Stream pipeline from Turkey to Western Europe (World Bank, 2007). This tightens and maintains its position in gas exporting to Europe through providing an incentive of sustained gas supply without risks of supply disruption in the future, depending on its highest global gas proven reserves which represents around 25% (BP, 2008) in comparison to the Caspian region and the Middle East. In addition, the EU probably will not deal with Iran for gas supply due to its political instability and the U.S. objection to any deal that would support the Iranian economy. However, the EU is uncertain about Russia's capability in meeting the expanding gas demand to fill the new South Stream pipeline and Nord Stream pipeline's annual capacity. Although, Russia has developed alternative energy policies regarding the expansion of nuclear power and coal consumption to compensate its domestic increases gas demand to meet its export obligations (Umbach, 2010).

Russia's policies are certainly the result of the EU's emerging common energy policies and the declared goals of establishing liberalized energy markets. In the case of successful EU implementation, it will threaten Russia's monopoly policies, market shares in the EU and long-term contractual prices in the European gas market. Umbach (2009) argues that the EU needs to have a common political will to implement all the decisions that they have agreed upon to overcome the challenges opposing their political credibility in economic energy and common foreign and security policies.

5. THE CURRENT NABUCCO DEBATE

The 2008 gas dispute between Russia and the Ukraine which caused a shortage of gas supply in around 20 European countries revived the negotiations for implementing the proposed Nabucco pipeline. In January 2009, the Nabucco pipeline summit was held in Budapest. It aimed for assurance of sufficient gas supply for the pipeline. The main gas suppliers (Azerbaijan, Iraq, and Turkmenistan) for the Nabucco pipeline supported the project and their willingness for supplying it. Even Iraq declared its interest in supplying the Nabucco pipeline depending on its estimated gas reserves at 3.1 tcm, and with possible future reserves that could increase to 6.1 tcm. However, its participation has not been confirmed since it depends on the Iraq energy development plan which has not been processed yet (Pannier, 2009). As an outcome, The EU decided to support the project politically and financially. The European Commission promised to provide 250 million Euros. However, it recently decided to allocate only 200 million Euros to the European Investment Bank (EIB) for financing the project, as guarantees at the first stage of pipeline construction. Moreover, the EIB and the European Bank for Reconstruction and Development (EBRD) agreed to finance the project up to 25% of the project cost under certain conditions, including a secure intergovernmental agreement on the Nabucco pipeline to be reached, and, according to EBRD president Thomas Mirow, "meeting the requirements of solid project financing" through concrete plans and completion guarantees (DW, 2009).

In April 2009, there was an emphasis by the European leaders for the formation of a greater dialogue and the cooperation between energy consumers, suppliers, and transit countries. They worked on the creation of a stable international energy framework that was transparent, fair and legally binding, in the energy summit "Natural Gas for Europe: Security and Partnership" which was held in Sofia, Bulgaria (Rousseau, 2009). This approach was the cornerstone for future debates for implementation and more financing of the Nabucco pipeline. In May 2009, the EU's "Southern Corridor Summit" was held in Prague. Two gas supplier nations (Azerbaijan and Egypt), and two key transit nations (Turkey and Georgia) signed on to the agreed text to boost gas imports to the EU through the Nabucco pipeline. However the representatives of Kazakhstan, Turkmenistan, and Uzbekistan refused to sign the text. In addition, the the Iraqi representative was absent. The Intergovernmental Agreement was signed in Ankara, Turkey on July 13, 2009. This was a significant step in the development of the Nabucco pipeline as it establishes the legal and political framework for gas transit between EU member states and Turkey.

6. DISCUSSION

Despite the December 2008 crisis, the implementation of the Nabucco pipeline project is still dividing the EU. The most vulnerable member states of the Russia-Ukraine gas crisis, such as Hungary and Bulgaria, are in total support of the project so as to avoid dependency on Russian gas and to avoid any supply disruption in the future. However, other EU members, such as Germany and Italy, are undermining the project; their argument being that it is not economically viable as it is probable that there is insufficient gas to supply it.

The economical, logistical, and political obstacles facing the project mean that its implementation depends on EU political will. However, the Nabucco pipeline will develop the EU target of diversity in gas suppliers and routes, and will reduce dependency on Russian gas. In fact, it will moderate Russia's incumbency as the major gas supplier to Europe, which in turn will raise fair competition and stabilize the global gas market. On the EU level, the Nabucco pipeline will boost new energy cooperation and strengthen the relations between the EU member states, as well as supporting the delivery of the EU unified voice objective at an international level. Umbach (2010) argues that without the Nabucco pipeline and a diversification of gas imports to new EU member

states, a common and liberalized energy and gas market could hardly be realized in central and southern Eastern Europe. Instead there would be a fragmented energy market, in which the Eastern part of the EU remains highly dependent on Russia's energy supplies, whereas the Western EU will have diversified energy supplies, particularly in gas imports.

On the international level, the EU will gain a significant position in the peace process since it will have energy agreements with the gas suppliers and the transit countries. This will allow political and economic engagement with the Middle East, North Africa, and Caspian region. The main objectives of these energy agreements are to fund new sustainable energy projects, to enhance and reinforce these countries' sustainable development, to promote technical and industrial cooperation, and to boost technology transfer. This will benefit countries such as Egypt (through the 2008 memorandum of understanding for EU-Egypt energy cooperation where the EU is willing to fund the implementation of renewable energy projects in Egypt) with their domestic politics since it will assist in economic development, raise much-needed new job opportunities, and develop a new sustainable energy infrastructure.

All these incentives will act as a drive for the peace process in different regions. The energy cooperation between countries may help to stabilize political situations and enhance domestic social justice. For example, since Egypt's gas will be transported via a pipeline through Jordan and Syria, Egypt may be able to influence the conflict between Palestine and Israel.

The critical concern is Turkey's role. In addition to its strategic geographic location, Turkey is attempting to reinforce its position in the natural gas market as a dominant energy trader in the future. The impetus behind Turkey's reforms in restructuring its natural gas ownership and markets is to harmonize its energy policy with that of the EU with the ultimate aim of EU accession (Hacisalihoglu, 2008). This raises the question of the refusal of Turkey's EU membership. What is the possibility of a Turkey-EU gas dispute in the future? This assumption needs to be taken into consideration since Turkey will be the main gas transit country to the EU either through the Nabucco pipeline or through any other pipeline. This is due to Turkey's unique geographic link between Europe and most of the world's gas proven reserves such as the Caspian region. Furthermore, Turkey is building a new gas transmission infrastructure and signing gas import agreements with these countries, with the main objective of bypassing Russia's natural gas network; such as gas imports from Azerbaijan and Turkmenistan through both pipelines the South Caucasus pipeline and trans-Caspian Gas pipeline from Azerbaijan and Turkmenistan to Turkey passing through Georgia (Mavarakis et al., 2006). Therefore, there would be a high possibility for Turkey to interrupt the gas supplies to the EU, if it failed to obtain EU membership.

7. CONCLUSION

This article discussed the main impacts of the implementation of the proposed Nabucco pipeline project that is expected to be the EU gas transmission flagship. It will transport gas from Turkey to Central Europe passing through Bulgaria, Hungary, and Romania, ending at Austria, while gathering gas from most of the world's significant gas proven reserves in the Caspian region, Middle East, and North Africa. It will have an enormous impact on the EU in meeting future demands, in the security of sustained supply, in diversifying gas suppliers, in reinforcing competitiveness, in promoting a liberalized gas market, and in maintaining a unified voice at international debates which is, in fact, one of the main EU common energy policy targets. Furthermore, the Nabucco pipeline may accelerate the peace process in some regions, such as between Palestine and Israel. There would be promotion of sustainable development in most of the developing countries involved in supplying or transmitting the gas. It has been noticed that most of the obstacles faced by the Nabucco pipeline are related to political issues, mainly the

uncertainty of Turkey's emerging gas market, its geographical role, and EU accession. The final decision is for the EU member states through unified political will and voice.

The decision for implementing the Nabucco pipeline is a complicated process due to the large number of different countries involved, with various political, logistical, social, and economic concerns. As with the current global economic crisis, it makes the decision for funding this huge 7.9 billion Euros project at risk unless all the uncertainties associated with the implementation of this project are defined and resolved.

The success of the implementation of the Nabucco pipeline may be achieved under certain conditions: ensuring that there will be enough gas supply to fill the pipeline to maximum capacity, flexible collaboration and integration between the EU members themselves and with transit and supply countries through ensuring a common energy goal and strategy, and setting the final decision for Turkey's EU accession and rigorous guidelines for being the EU's main energy transit country.

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