

I would like to dedicate this dissertation to my son Sinan, who has enough energy to power a small town, always keeps me occupied and makes me work for a better future.



EXOGENOUS SHOCKS AND GOVERNING ENERGY SECURITY

The Graduate School of Economics and Social Sciences

of

İhsan Doğramacı Bilkent University

by

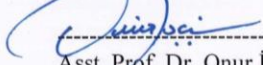
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In Partial Fulfillment of the Requirements for the Degree of
DOCTOR OF PHILOSOPHY IN INTERNATIONAL RELATIONS

THE DEPARTMENT OF
INTERNATIONAL RELATIONS
BİLKENT UNIVERSITY
ANKARA

July 2017

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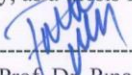
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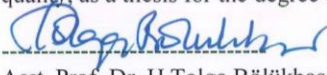
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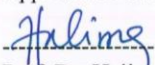
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ABSTRACT

EXOGENOUS SHOCKS AND GOVERNING ENERGY SECURITY

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July 2017

The research examines how governments maintain energy security when faced with exogenous shocks. The main focus of inquiry examines the relative influence of markets vs. geopolitics in the area of energy security using the comparative case studies of Turkey, France, and Netherlands, which are OECD economies and NATO members, but feature diverse settings and contexts as well as different energy mixes, geographies, and demographics. The research then inquires how these countries' respective governments responded to four exogenous shocks: a) 2003 invasion of Iraq and ensuing oil price hike; b) Russia-Ukraine natural gas crisis of 2005/6; c) 2008 world economic crisis and ensuing extreme oil price fluctuations; d) 2011 Fukushima nuclear meltdown. It is argued that governments operate within two distinct decision time horizons to maintain energy security. The concept of "Term Structure Approach to Energy Security" is introduced, which refers to government's capacity to respond to exogenous shocks within different time horizons. In the short term, governments cannot respond to vulnerabilities with optimum efficacy, so they seek palliative solutions. In the long term, governments develop a greater capacity to the area of energy security, to minimize vulnerabilities. Thus, governments implement different strategies associated with different term structures in responding to exogenous shocks to their energy security. Geopolitics and external adjustment (EGA) observed tend to be of long term, and set the structure within which markets operate. Therefore, system level influences are more observable in maintaining energy security.

Key Words: Energy Markets, Energy Security, Geopolitics, International Relations, Nuclear Energy.

ÖZET

HARİCİ ŞOKLAR VE ENERJİ GÜVENLİĞİ YÖNETİŞİMİ

Diriöz, Ali Oğuz

Doktora, Uluslararası İlişkiler Bölümü

Tez Danışmanı: Yrd. Doç. Dr. Onur İşçi

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Bu araştırma, hükümetlerin harici şoklar karşısında enerji güvenliğini nasıl sağlamaya çalıştıklarını incelemektedir ve Türkiye, Fransa ile Hollanda karşılaştırmalı örnek vakaların, enerji güvenliğinde piyasa mekanizmalarına karşı jeopolitik faktörlerin göreceli etkisini incelemektedir. Fiyat şokları, jeopolitik olaylar, afetler veya felaketler ve benzer olaylarla karşılaştıklarında, hükümetler enerji güvenliğini nasıl muhafaza ettiklerini irdeler. Türkiye, Fransa ve Hollanda'nın seçilmelerinin nedeni, üçünün de Avrasya'da OECD ve NATO üyesi olmaları; fakat farklı konumlara, şartlara, enerji bileşimlerine, coğrafya, ekonomi, ve nüfus özelliklerine sahip olmalarıdır. Araştırma, üç ülke hükümetlerinin, dört harici şoka nasıl tepki gösterdiklerini ele almaktadır: a) Irak'ın işgali ve akabindeki petrol fiyatındaki yükselme, b) 2005/6 Rusya-Ukrayna krizi, c) 2008 dünya ekonomik bunalımı ve akabinde petrol fiyatlarındaki aşırı iniş-çıkışlar, d) 2011 yılı Fukushima nükleer santral kazası. Hükümetlerin, enerji güvenliğini sağlamak için iki ayrı zaman diliminde hareket ettikleri ileri sürülmektedir. Hükümetlerin harici şoklara, farklı zaman çerçevelerinde tepkilerinin üzerinde duran “Enerji Güvenliğine Farklı Zaman Dilimleri Çerçevesinde Yaklaşımı” ortaya konmaktadır. Kısa vadede hükümetler, zaafiyetlere karşı etkinlikle mukabelede bulunamamalarından geçici çözümler aramaktadırlar: Örneğin tedarikçilerden kaynaklanabilecek kesintilerle başa çıkabilmek amacıyla sıvılaştırılmış doğalgaz ithal etmek gibi. Uzun vadede hükümetler, zaafiyetleri asgariye indirmek amacıyla enerji güvenliği alanında kapasite geliştirme yoluna gidebilirler ve bu amaçla boru hatları veya nükleer santraller inşaatı için hükümetlerarası anlaşmalar yapabilirler. Böylece hükümetler, enerji güvenliklerine yönelik harici şoklara karşılık verirken, farklı zaman çerçevelerinin sözkonusu olabileceği farklı stratejiler uygulayarak. Gözlemlenen jeopolitik ve harici ayarlamalar uzun vadeli olmaktadır ve piyasaların içinde işleyeceği çerçeveyi

oluřturmaktadırlar. Dolayısıyla, enerji güvenliđini sađlamada, sistemik etkiler daha gze arpmaktadır.

Anahtar kelimeler: Enerji Gvenliđi, Enerji Piyasaları, Jeopolitik, Nkleer Enerji, Uluslararası İliřkiler.



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ABBREVIATIONS

Consultation, Command & Control (3C)

The EU's Agency for the Cooperation of Energy Regulators (ACER)

Netherland Authority for Consumers & Markets/De Autoriteit Consument & Markt (ACM)

Africa-EU Energy Partnership (AEEP)

Asian Financial Crisis (AFC)

French Development Agency / l'Agence Française de Développement (AFD)

Adalet ve Kalkinma Partisi / Justice and Development Party (Ak Parti/ JDP)

Build-Operate-Transfer (BOT)

Boru Hatlari ile Petrol Tasima Sirketi/ Petroleum Pipeline Corporation Turkey (BOTAS)

Brent Crude Oil (BRENT)

British Leave/Remain vote referendum from the European Union (BREXIT)

The group consisting of Brazil, Russia, India, China, and South Africa (BRICS)

Baku-Tbilisi-Ceyhan Crude Oil Pipeline (BTC)

BTC Company (BTC Co.)

Baku – Tbilisi – Erzurum Natural Gas Pipeline (BTE)

Netherlands Bureau for Economic Policy Analysis / Centraal Planbureau (CPB)

Critical and/or Historical Event (CE)

Commissariat à l'Énergie Atomique /Atomic Energy Commissariat, France (CEA)

The Council of European Energy Regulators (CEER)

Energy Regulatory Commission of France/ Commission de régulation de l'énergie (CRE)

Domestic (or Internal) Market Adjustments (DMA)

U.S. Department of Energy (DoE)

External Balancing (EB)

The European Coal and Steel Community (ECSC)

The Energy Charter or Energy Charter Treaty (ECT)

Électricité de France (EDF)

External Geopolitical Adjustment'' (EGA)

Energy Information Administration of the US. Department of Energy (EIA)

Energy Markets Regulatory Authority of Turkey (EMRA / EPDK)

Energy Security (EnSec)

The European Network of Transmission System Operators for Electricity (ENTSO-E)

Energy Exchange Market / Enerji Piyasaları İşletme A.Ş. (EPIAŞ / EPIAS)

Netherlands Energy Regulation Office / Eneregje Kammer (ERO/EK under ACM)

Energy Regulators Regional Association (ERRA)

European Union (EU)

European Union Energy Initiative (EUEI)

The European Atomic Energy Community (EAEC or EURATOM)

Association of European Energy Exchanges (EuropEx)

Energy Exchange Istanbul (ExIst)

La République Française / French Republic (FR)

Granger Causality / Granger Cause (G-Cause)

Gulf Cooperation Council (GCC)

Gaz de France – Suez now Engie (GDF now Engie)

Gross Domestic Product (GDP)

International Atomic Energy Agency (IAEA)

Internal Balancing (IB)

Information and Communication Technologies (ICTs)

International Energy Agency (IEA)

International Organizations (IOs)

International Oil Corporations (IOCs)

International Political Economy (IPE)

International Public Goods (IPGs).

International Relations (IR)

International Renewable Energy Agency (IRENA)

International Security Studies (ISS)

Adalet ve Kalkınma Partisi / Justice and Development Party (JDP/Ak Parti)

Kurdish Regional Government in Northern Iraq (KRG)

Liquefied Natural Gas (LNG)

Populist Party , Netherlands (LPF)

Mediterranean Energy Regulators (MEDREG)

Ministry of Foreign Affairs France / Le ministère des Affaires étrangères et du Développement international (MFA FR)

Ministry of Foreign Affairs Turkey/ T.C. Dışişleri Bakanlığı (MFA TR)

Ministry of Foreign Affairs Netherlands / Ministerie van Buitenlandse Zaken (MFA NL or MINBUZA)

Multi-National Corporation (MNC)

Multi-National Energy Company (MNEC)

Million Tons of Oil Equivalent (MTOE)

Megawatt (MW)

Megawatt per hour (MWh)

North Atlantic Treaty Organization (NATO)

National Energy Company (NEC)

Non-Governmental Organization (NGO)

Koninkrijk der Nederlanden / The Kingdom of the Netherlands (NL)

National Oil Companies (NOCs)

Organisation of Economic Cooperation and Development (OECD)

Organization of Petroleum Exporting Countries (OPEC)

States 's Market Financial Settlement

Center , Turkey. (PMUM) Piyasa Mali Uzlaştırma Merkezi (PMUM)

Photovoltaic (PV) / Solar photovoltaic (Solar PV)

Renewable Energy Cooperation Programme of AEEP from Lisbon Treaty (RECP)

Renewable feed-in tariffs (REFITS)

Regulation for energy market integrity and transparency (REMIT)

State Oil Company of Azerbaijan (SOCAR)

South European Pipeline System (SPSE)

Term Structure Approach to Energy Security (TSA-ES or TSA-En.Sec.)

Trans-Anatolian Pipeline (TANAP)

Trans-Adriatic Pipeline (TAP)

Turkmenistan–Afghanistan–Pakistan–India Pipeline, or Trans-Afghanistan Pipeline (TAPI)

Timeframe Approach in Energy Diplomacy (Ti-FA EDip OR Ti-FA)** (Replaced by TSA-E)

Turkish State Petroleum Company (TPAO)

Türkiye Cumhuriyeti / Republic of Turkey (TR or TC)

Term Structure Approach to Energy Security (TSA-EnSec or simply TSA-E)** (This replaces Ti-FA and Ti-FA Edip)

Transmission System Operator (TSO)

Terawatt (TW)

Terawatt-hours (TWh)

United Arab Emirates (UAE)

United Nations (UN)

United Nations Security Council (UNSC)

United States (US)

United States of America (USA)

United States Dollars (USD)

Union of Soviet Socialist Republics (USSR)

United Kingdom (UK)

Virtual Power Plant (VPP)

World Energy Council (WEC)

World Forum on Energy Regulation (WFER)

Weapons of Mass Destruction (WMD)

West Texas Intermediate Crude Oil (WTI)

World Trade Organization (WTO)

CHAPTER 1

INTRODUCTION AND OVERVIEW

This dissertation examines the impact of exogenous shocks and how governments' respond to these shocks, given their vulnerabilities and sensitivities, to maintain energy security. The main focus of inquiry examines the relative influence of markets vs. geopolitics on governments' policies in the area of energy security using the comparative case studies of Turkey, France, and Netherlands, specifically how governments maintain energy security when faced with events such as price shocks, geopolitical events, and natural or man-made disasters. Turkey, France, and Netherlands are OECD economies and NATO members in Eurasia (from the Atlantic to the Urals) but feature diverse settings and contexts as well as different energy mixes, geographies, demographics, and economies. The case studies look at how these countries' respective governments responded to four exogenous shocks: a) the invasion of Iraq and the subsequent oil price hike; b) the Russia-Ukraine natural gas crisis of 2005/6; c) the world economic crisis since 2008 and ensuing extreme oil price fluctuations; and d) the 2011 Fukushima nuclear meltdown in Japan.

I argue that governments operate within two distinct decision time horizons in adjusting policies intended to maintain energy security. Discussed in greater detail below, my concept "Term Structure Approach to Energy Security" refers to government's capacity to respond to exogenous shocks within different time horizons.¹ In the short term, governments cannot respond to vulnerabilities with optimum efficacy, so they seek palliative solutions: For example, they might

¹ The name was inspired from the Macroeconomic concept on interest rates, but the concept is different and is a concept on timeframes / time horizons. In this dissertation, short term is considered 1 to 2 years. In economics short term is usually considered 1 year. However, in this research anything under election periods of 2 years is considered short term, while medium term is 2 to 4 years or roughly the time of an elected term in office. Long term tends to be 4 years or more. Sometimes short to medium term is considered as up to 3 years. Medium to long term would be over 3 years.

apply stopgap measures like importing more Liquefied Natural Gas (LNG) from major exporters like Algeria or Nigeria in order to cover temporary disruptions or shortfalls from larger contract suppliers. In the long term, however, governments can develop a greater capacity, through adjustment mechanisms specific to the area of energy, to minimize or eliminate vulnerabilities via measures such as intergovernmental agreements on building new pipelines and nuclear power plants. Thus, governments implement different strategies conditioned by the specific parameters of action associated with different term structures in responding to exogenous shocks to their energy security. Thus, this research aims to understand how governments' preferences are structured by the short term and long term nature of the decision taken to respond to that shock.

1.1 Research question

How do governments aim to maintain energy security when faced with an exogenous shock? This research examines the impact of exogenous shocks on governments' policy-making in the area of energy security. I describe exogenous shocks as price shocks, geopolitical events, and natural or man-made disasters that affect energy security. A key aim of this research is to observe changes in energy-related policy and develop a better understanding of the nature of politics and governance of intertemporal policy choice under exogenous shocks using an original concept called the "term structure approach." This novel approach focuses on examining changes in energy-related policy in the presence of exogenous shocks in order to ascertain if those changes are market-centered or geopolitics-oriented. This dichotomy – markets versus geopolitics – refers to whether the respective focal policy changes consist of internal/domestic market adjustments or external geopolitical adjustments. "Adjustment" in this context refers to the response by adoption of new policy measures to balance or offset the effects of the analyzed exogenous shock. Thus, this dissertation proposes, develops, relevant and novel dichotomous intertemporal concepts of "domestic (i.e. internal) market adjustments" (DMA) and "external geopolitical adjustment" (EGA) within the empirical scope of three country case studies, the primary focus of which are governments. In this vein of thinking, a key assumption of this research is that governments design their energy-related foreign policies (the ones dichotomized here as DMA and EGA) in order to reduce vulnerabilities to supply disruption and thus maintain energy security. The energy security

definition assumed in this research emphasizes “access” to resources or markets, hence the “process” ensuring access to and availability of energy resources and markets.

1.2 The argument

The dissertation’s core hypothesis centers on the notion that governments employ two distinct decision time horizons in designing their foreign-policy approaches to energy security – hence, the abovementioned focus on the nature of the politics and governance of intertemporal policy choice under exogenous shocks. For this purpose, the dissertation advances the concept of “term structure” to refer to governments’ different capacities to respond to exogenous shocks over time periods of significantly unequal lengths. In the short term, governments cannot eliminate vulnerabilities, but can adopt palliative measures to ease the impact of the exogenous shocks in question. Thus, when governments make short term decisions, their preferences and choices are largely economic, i.e. governed by the parameters of market cycles.

Examples of market mechanisms include commercialization of energy commodities and electricity by means of market liberalization (privatization), creation of new energy stock exchanges. Policies in the short run may actually involve a mix of externally-oriented policy decisions such as supplier diversification and internally-oriented ones like liberalization of the electricity-distribution market, but DMAs are more prominent in the short run. Longer term policies, on the other hand, involve a greater degree of EGA.²

Analogous in certain circumstances to the operation of market mechanisms, which in *most* cases can be accessed over the short-to-medium term, DMAs include domestic policies aimed at building more robust internal capacity. The domestic policies aimed at building more robust internal capacity is not just a concept of institutionalists but also of many scholars identified with the Neoclassical Realism (Taliaferro, 2006). These DMA are consistent with and include observed

² Other factors like technological developments and environmental concerns are also important. However, as decided in the initial phase of the research proposal, this research focused on markets and geopolitics aspects.

policy measures such as subsidies (e.g. feed-in tariffs), energy stock markets, and developing local renewable energy sources or nuclear energy. It is important to bear in mind, however, that not all market mechanisms are categorically short term. For instance, implementation of new market rules, creation of new stock markets, or financial and economic structural adjustments are policies that may take more time to establish, so they may be operational only in the medium term and sometimes in the longer term.

Although longer term market mechanisms do not often fit within the same “long term” timeframe structure as the construction of major infrastructure projects such as pipelines or nuclear power plants, it is still possible to conceive of certain market design mechanisms as long term. For example, measures to increase transparency in energy transactions are clearly more effectively available and operational over the longer term. In the long term, nonetheless, governments do have the capacity, by implementing policy instruments consistent with DMA or EGA, to respond to and minimize vulnerabilities. In making medium-to-long term decisions, they are largely seeking successful political-economic strategies for coping with the impact of more structural and systemic geopolitical factors.

Table 1. Time horizon and type of adjustment

		Type of Adjustment	
		DMA	EGA
Time Horizon	Short term	Incentive policy, such as renewable feed-in tariffs (REFITS)	Additional purchase of LNG (e.g. Turkey buying natural gas from Qatar)
	Long term	Development of domestic capabilities, such as coal, wind, solar, geothermal, and LNG terminals	Accessing new sources of external supply via multinational pipeline and other projects (e.g., Turkey with Russia and Iraq)

The threats, opportunities, weaknesses and strengths (TOWS) analysis matrix (Wehrich, 1982), which is a tool for short and long term situational analyses, has been an inspiration in developing

Table 1 to describe the ‘Term Structure Approach to Energy Security.’ In the TOWS analysis, there’s also an internal and external differentiation, where the threats and opportunities are also considered as external, while strengths and weaknesses internal. With this example in mind, I have formed the above Table1. In relation to the above Table 1, we need to note that nuclear power plants may be long term investments compatible with both DMA and EGA, as is the case of the Akkuyu nuclear power plant. Also, just as there is much exceptionality in the French grammar, there are also many exceptional situations in energy security. For one, I have also suggested that if nuclear plants are developed through internal investment and technological resources, as in countries that already possess vast experience in civilian nuclear energy and/or easily accessible uranium reserves, like Russia, France, or the United States, only then would nuclear energy be considered as purely “internal/domestic” DMA. For emerging-market countries developing nuclear energy, it is very likely to be a mode of action that combines features of DMA and EGA, but effectively more of an EGA than DMA response due to the role of ‘strategic’ investment and alliance-like behavior. For example, the case of the United Arab Emirates (UAE) collaborating with a South Korean consortium led by Korea Electric Power Corporation (KEPCO) can be described as a model of strategic international collaboration and interstate energy diplomacy (Dirioz & Reimold, 2014). Turkey, by developing the Akkuyu nuclear power plant in cooperation with Russia’s Rosatom, is engaged in making a “strategic investment” resulting from an intergovernmental agreement between Turkey and Russia. It may appear as a form of DMA, but because the investment was a Build Operate Own license by a Russian company, it is considered in this research as an example of EGA.

By the same token, an “Intergovernmental Agreement” between Russia and Turkey on the investment of a nuclear power plant is an interesting event to analyze for this research, and an important case study in support of the argument. On the other hand, EGA consists of securing new resources from alternative suppliers of oil and gas, such as importing additional LNG in times of shortage. Pipelines are means for transporting resources across borders, so like nuclear energy, hydrocarbon pipelines can be considered as both DMA and EGA mechanisms, depending on whether or not they were initiated by an intergovernmental agreement, but more importantly

whether they are within a single country, such as the Abu Dhabi to Fujairah pipeline in the UAE, or trans-border such as the BTC between Azerbaijan-Georgia-Turkey.³

The significance of material capabilities and economic vulnerabilities in both the Liberal and Neoclassical Realist traditions suggests they are not necessarily advancing opposing alternative perspectives on how to maintain energy security. Both paradigms appear to allow for the potential development of alternative energy sources (both renewables and nuclear) to reduce dependency on hydrocarbon imports or decrease vulnerability to disruptions in the flow of those imports. The original approach set forth in this dissertation attempts to develop an argument compatible with the logics of both the Liberal and Neoclassical Realist understandings.

1.2.1 Theoretical framework

Geopolitics and markets affect energy security, but different theoretical approaches assign different weights to these factors. Waltz (1993) indicates that peace is an absolute precondition for trade and economic interdependence, not vice versa; suggests that, as part of their foreign economic policies, governments try to avoid excessive dependence for national security reasons; and provides the example of Japan and “managed” trade to show how states act to avoid becoming overly dependent on a specific resource or vulnerable to a particular supplier. Furthermore, Waltz (1993) draws attention to the competitive nature of territories that might be resource rich, such as the presumably oil-rich Spratly Islands. For Realists, mitigating vulnerabilities and their associated risks are primary objectives of governments. Indeed, Neoclassical Realist notions of mobilization and extraction of resources, such as those put forth by Mastanduno, Lake, & Ikenberry (1989) and the aforementioned Taliaferro (2006), are key conceptual inspirations behind the modes of DMA and EGA developed here.

³ Like nuclear energy, if the pipeline is designed to transport energy between a field and point of sale located within national territory, then it is more likely to be internal/domestic. On the other hand, BTC and TANAP fit the category of external-geopolitical due to their transboundary nature.

For the time periods it addresses, this dissertation assumes the everyday functioning of a Neo-Liberal economic world order (in energy, for the case countries), where events in global financial markets have big impacts on economic decision-makers. In that respect, the role of “external shocks”, as defined by Krugman (2009: 21-22), discusses possible economic policies in responses to the effects of depression and crisis on the global and national economies. However, this dissertation explores the role of policy tools in explaining the particular characteristics of energy and oil that distinguish them from other natural resources (Nye, 2004). In that respect the internal and external balancing concepts of Realism were a greater source of inspiration for this project. In addition, for the purposes of understanding policy based on market mechanisms, the Liberal notions of sensitivities and vulnerabilities in Complex Interdependent relationships (Nye, 2008; Keohane and Nye, 2009, 2011) were useful. Indeed, the concept of DMA is analogous with the concept of minimizing vulnerabilities in Complex Interdependent relationships and responding to “external shocks”(Krugman, 2009 : 21-22) in global markets.

There is an implied division between those who argue over the relative importance of geopolitics and markets for maintaining energy security. Thus, this debate between markets and geopolitics can be incorporated, taking into account the specific physical features of particular energy resources, into the larger debate between the Realist and Liberal paradigms. In particular, Realism provides a fruitful theoretical grounding for the geopolitical arguments advanced in the energy security debate, whereas Liberalism highlights the pro-market side of this debate. The geopolitical vs. markets debate is to a great degree consistent with the Neo-Realist logic of Waltz (1993, 2000, 2011) as well as those of other Neoclassical Realist scholars (Lobell, Ripsman, and Taliaferro, 2009; Taliaferro, 2001, 2006). Henceforth, this dissertation, with similarities to Neoclassical Realists, understands that system-level influences shape the framework of policy, particularly in the area of energy security, giving geopolitics greater influence in the long term. This heavier influence of geopolitics stems from its systemic nature. Critical events and political decisions act to interfere with or constrain the normal market operation of supply-demand mechanisms. While both market mechanisms and geo-political factors are generally important and both are essential to understanding energy security, this dissertation foresees the growing importance of geopolitics (Klare, 2008) in setting the parameters within which markets function.

1.2.2 Main assumptions

A key assumption of this dissertation is that balancing (internal and external) in foreign policy consists of responses to an “event” rather than an actor. Likewise, DMA and EGA are more event-driven than actor centric. Exogenous shocks such as the gas crisis between Russia and the Ukraine (or the US occupation in Iraq and ensuing rise of oil prices, the 2008 world economic crisis and ensuing extreme oil price fluctuation, and the Fukushima fallout) are historic events and situations where foreign policy circles have faced external challenges. Crises like these that have effects over long geographical distances, as in the case of pipelines, are also considered geopolitical events. This is because a political decision has been taken that affects or applies to a particular geographical area or physical space. In response to such events, decisions, such as intergovernmental agreements to make big multinational infrastructural investments, constitute both DMA and EGA. By way of example, Turkey’s willingness to pursue both the Nabucco/TANAP projects (which allow alternatives to Russian gas) and South/Turk Stream (which in effect allows *more* Russian gas to bypass the Ukraine) presents an apparent contradiction, except that DMA/EGA acts are actually responses to the “geopolitical event” of uncertainty of future flows of gas through a particularly risk-prone geographic route such as the Ukraine. The development of the Akkuyu nuclear plant indicates that the primary concern over energy security was related to a particular crisis rather than a specific government.

For this dissertation, an exogenous shock that is by nature external-geopolitical – like war, natural or manmade disasters (such as nuclear accidents) and other events of social and political instability – is defined as an event that triggers security concerns and strategic thinking. This type of exogenous shock motivates policy-makers to engage in a type of balancing that typically occurs in the political realm. For instance, if Iran threatens the Gulf States by destabilizing the Strait of Hormuz, those states would form alliances (such as the Gulf Cooperation Council-GCC) or build circumventing pipelines.⁴ For example, during the Iran-Iraq War (1980-1988), both Iraq and Saudi

⁴ Pipelines could be considered as both internal and external forms of balancing *and* as both DMA and EGA. An example of internal measures to counterbalance the risks associated with the Strait of Hormuz by means of developing pipelines would be the Abu-Dhabi to Fujairah pipeline project within the UAE. That pipeline is an act of

Arabia initially had alternatives through overland pipelines (Tapline and Kirkuk-Ceyhan) in the event of the Strait of Hormuz becoming unusable (Stevens, 2000).

The series of political-security crises between Russia and Ukraine resulting first an annexation, and then Crimea's referendum to join Russia comprise another example of exogenous shocks that are considered external-geopolitical events. For instance, Figure A.10.1 in Appendix 10 is an illustration of the Russia-Ukraine gas tensions affecting the EU. The effects of EGA measures, such as intergovernmental agreements on pipeline projects (for energy import, export, or transit) or building domestic energy plants that are in fact the result of an intergovernmental agreement (such as Akkuyu Nuclear), are observable in the mid-to-long term (typically 3 years or longer). These EGA measures aim at enhancing capacity to respond to and minimize the future impact of vulnerabilities.

On the other hand, again for this dissertation, an exogenous shock that is by nature market-related is an event triggering primarily macroeconomic concerns and financial policies. Such exogenous shocks that are characterized as “market related events” or economic “external shocks” (Krugman, 2009 : 21-22) are assumed to trigger policies primarily involving the adoption of new internal measures. Thus, the internal mechanisms are assumed to be in the short term more palliative (stop-gap). Such palliative (stop-gap) measures in response to external “market related event” consist of economic actions such as government incentives and subsidies (such as feed-in tariffs), privatization, or market creation/design. These are assumed to be in general oriented more towards domestic policies and so fit the description of DMA. For example, economic crises, creation of spot markets or energy markets,⁵ regional customs agreements, and purchasing and re-selling

balancing by internal means because the pipeline is planned to be laid within the territories of the UAE. In the early 1980's, Saudi Arabia had the Trans-Arabian Pipeline – the Tapline (built in the late 1940's) – transporting oil from the Gulf to the Mediterranean. However, by the 1980's it was barely operational, and due to the June 1982 Israeli occupation of Southern Lebanon, the section providing access to the Mediterranean was closed (Stevens, 2000). Today the Tapline is no longer operational. By contrast, Iraq, in spite of all its instability, still has the option to export oil, as it did during the Iran-Iraq war, through the Kerkuk-Yumurtalik (sometimes called Kirkuk-Ceyhan) pipeline, which was completed in 1976 (Iraq-Turkey Crude Oil Pipeline, www.botas.gov.tr), though today, the issue represents a source of disagreement between the Turkish and Iraqi governments due to the direct dealings and new pipeline between Turkey and the Iraqi Kurdish Regional Government (KRG) (“Kirkuk storm not over,” 2017).

⁵ Such as Leipzig, Prague, for electricity, and EPIAS in Istanbul, Turkey

agreements⁶ are considered market events for this particular framework. Economic decisions such as privatizations and market liberalization are visible stopgap measures in the short-to-mid-term (typically up to 3 years) that cannot by the assumptions made here address long term vulnerabilities. Even if there is an energy stock exchange, for example, the physical availability and supply security concerns of energy products make the operation of a market mechanism a palliative solution rather than one reducing long term vulnerabilities. Without sufficient infrastructure, availability or access, the market can do little to provide long term stability to reduce vulnerabilities in the event of a major shortage.

Some cases are more ambiguous in terms of their proper categorization. For instance, government concessions to private consortia that obtain the right to explore, extract, produce, refine, trade and distribute energy-related products are economic mechanisms within the market where private enterprises operate according to profit-maximization goals. On the other hand, government concessions are not considered geopolitical, unless granted in disputed or “strategic” locations. For example, on-shore or off-shore government concessions are not considered geopolitical, unless they are granted in disputed or “strategic” locations such as in the Eastern Mediterranean, as they involve granting rights to private companies to generate or extract energy commodities to be sold in the free market.⁷

Another ambiguous case meriting further discussion here pertains to increased LNG imports. Particularly spot-LNG is involving the utilization of existing global market. These are not government incentives or subsidies, as they are actions, in most part direct government interventions that are short term responses to exogenous shocks. Because cargos are imported from the international markets, and in most cases from a single country of origin, LNG has been categorized in Table 1 above as short term EGA. By nature, they have an obvious market character as they tap into existing global trade mechanisms; however, even though they are certainly short term and palliative, this action cannot clearly be placed in the category of ‘domestic/internal

⁶ Including but not limited to trading of the physical and “paper” stocks in commodities and futures markets, as well as their export and re-exporting agreements.

⁷ For an example of analysis of the politics surrounding the energy discoveries in the Eastern Mediterranean that was an issue between Turkey on one hand, Israel and Cyprus, see Grigoriadis (2014)

market adjustments' (DMA) because, they are direct purchase by the government from an "external" and predetermined country of origin – that is, a specific geographical locus. LNG producers are increasingly becoming more significant players in a global market in natural gas. However, LNG is "...still traded largely on a country-to-country basis, with negotiated prices that are specified in contracts" (Gjeltén, 2012). Spot LNG, though growing, is not yet a significant share of LNG contracts. Although this country to country trend may change in the near future, it is still an important justification for putting LNG imports under the EGA category, albeit short term. By contrast, a situation involving the negotiation of contracts to build LNG terminals in port facilities would be DMA, albeit long term. Therefore, LNG imports have been situated here in the category of EGA, for the main case study country Turkey and in general because of the aforementioned reasoning. LNG imports would be further discussed in chapter 2.

To summarize the main points in the above two paragraphs, exogenous shocks that are considered geopolitical events are more likely to trigger EGAs, while exogenous shocks that are considered market events are more likely to trigger DMAs. Hence it can be assumed that the governments of both energy importing and energy exporting countries, in trying to maintain energy security, can take few or limited short term measures when faced with extreme volatility of oil prices (upwards or downwards). For instance, in the aftermath of both the AFC and the 2008 economic crisis, oil export-dependent economies could not do much domestically to stop the fall of global prices (and neither could the OPEC on both occasions). Likewise, when faced with the rise of global oil price in the immediate aftermath of the Arab Spring in 2011, the oil importing countries could only take limited DMA-type measures in the face of a global trend in rising oil prices. Although in the long term governments may adopt DMA such as structural adjustments, reforms, restructuring, etc., these primarily affect the financial markets in the long run, not energy security per se.

Another important assumption, which led to my use of interviews as a method, was that elites are better informed about global events and much more knowledgeable about the complexities of energy security challenges. Thus, elite opinions are more likely to have a stronger impact on policy. Public opinion is assumed to have more leverage on issues that may affect election results. This, however, varies considerably depending on the society. Going into the interviews, an important caveat was to recognize that one person could not speak for the entire country. With

several interviews, responses became more methodologically significant, as it was assumed that each of these individuals could influence policy and thus would in the aggregate represent, to some limited degree, a county level of analysis.

The distinction that many interviewees made between resources upstream and downstream formed the basis for another assumption of this dissertation that energy resources are national strategic assets upstream and become market commodities only after they have been refined or supplied to grids. In the global markets today, energy products are traded commodities. Yet the resource extraction process or the “upstream process” can be very political or politicized. One specific example is the Eastern Mediterranean, where geopolitical rivalry overshadows the actual exploration and extraction process (Grigoriadis, 2014). Considering how governments would try to maintain energy security when facing exogenous shocks, resource scarcity can potentially lead to a conflict-prone competition among nations as described by Klare (2008). The theoretical debate about natural resources acting as strategic national assets is not unique to energy resources.⁸ Last but not least, nation states are assumed to be the primary actors in international relations and energy security. Therefore nation states are the primary units of analysis in this dissertation.

1.2.3 Definition of energy security

The definition of Energy Security is complex, and yet this term, which has an intermediate level of precision, has been preferred over Energy Policy for this dissertation. This preference of energy security over energy policy was mainly because the latter is not focused enough, while energy security is more strongly associated with International Relations. Energy policy falls within the domain of International Relations as well as Economics, Public Policy, Domestic Politics, Environmental Policy, etc. On the other hand, Energy Diplomacy is narrowly focused on governments’ foreign policy-making, and is already included within the purview of Energy Security. In the area of energy security, particularly on the question of access: “Energy diplomacy

⁸ Water resources are of critical importance and highly contested in water-scarce regions such as the Middle East (Hamdy, 2013; ‘Ashrī, Zaytūn, & Şa‘b, 2010; “International Decade for Action ‘Water for Life’ 2005-2015,” n.d.).

refers to any diplomatic activity designed to enhance access to energy resources” (EPC/Giuli 2015). However, this matter is already included within the purview of Energy Security.

There is no universally agreed definition of energy security. This is partly because there is no strong international organization dedicated to global energy issues. The two influential organizations representing supplier and consumer states are separate. There is the International Energy Agency (IEA) within the OECD and there is the Organization of Petroleum Exporting Countries (OPEC), which is an exporters’ cartel. Neither can truly ensure the needs of the global economy by providing stability of supply and demand. This is partly because the point of view of the appropriate type and level of security varies depending on the country in question: Russia worries about “demand security” – having a stable market to sell to – while China worries about “supply security” and having access to resources. Nuclear energy security is more uniformly agreed in terms of having an international regime established under the gatekeeping of a particular organization, namely the International Atomic Energy Agency (IAEA). However, this organization is oriented only towards nuclear energy and its mission is specifically focused on enforcing the international non-proliferation regime safeguarded by the non-proliferation treaty and preventing signatory states from cloaking ulterior motives of developing nuclear weapons under the guise of peaceful nuclear energy programs.

This research assumes a definition that emphasizes “access.” Both supply and demand security inevitably are concerned about respective “access” to resources or markets. Hence, the common denominator is about the “process” of ensuring access to and availability of energy resources and markets between suppliers and consumers. According to Sovacool et al. (2011), energy security and “access” should consider five dimensions related to; 1) availability, 2) affordability, 3) technology development, 4) sustainability, and 5) regulation. Securing access to reliable and affordable supplies of such resources or to markets represents a key aim of various importing countries’ governments. While the “price” of uninterrupted supply is logically an important factor in the context of market concerns, “access to” and “security of” strategic resources is just as often considered an issue that properly falls within the remit of government.

In sum, the assumed definition, based on the definition by the IEA (IEA, n.d.), is one where energy security is the following interpretation:

Energy Security is access to diverse energy resources made available to a vast majority of regional or global markets in a secure and uninterrupted manner at affordable market prices.

The IEA, an organization founded to pursue this objective after the 1973 OPEC crisis, further “works towards improving energy security by promoting diversity, efficiency and flexibility within the energy sectors of the IEA member countries...” (IEA, n.d.). The OECD and IEA play an instrumental role due to their “requirement” that national governments keep 90 days’ emergency stocks of petroleum in reserve. Commitments by governments to the rules and regulations of IOs such as the IEA are parameters in setting policies. The IEA focuses on a combination of accessibility, affordability, reliability (conceptual diagram of this definition is available in the appendices section). In this dissertation it’s considered that extreme oil fluctuations make the market unstable and unpredictable, causing both instability and uncertainty, which are threats to energy security.

This research is also predicated on the fact that the reigning concept of energy security is still predominantly focused on access to hydrocarbons. Furthermore, the current dominant perspective would be that regions such as the Gulf and countries such as Russia occupy places of strategic significance in such equations. It is manifestly evident as to how energy security debates can evolve from the concept of security.

Energy security is thus extremely complex and “access” to energy sources depends on a complex system of global markets, trans-border infrastructures and networks, private multinational corporations, and sets of complex interdependencies with financial markets and technological research and development centers (Chester, 2010).

1.3 Methodology : comparative case studies

1.3.1 Overview of case study, interviews and comparative methods

This dissertation studies the argument against the available evidence according to a particular set of scientific methods. King, Keohane and Verba (1994 : 4-33) underscore the importance of designing a research process, collecting data, and drawing conclusions. In International Relations, it is usually not feasible to conduct laboratory testing. Instead, social science inquiry often combines quantitative and qualitative methodologies (namely, large-N statistical analyses on the one hand v. single-case or comparative case studies on the other hand), and multiple levels of analysis.

Case studies are a common and frequently used research method in social sciences. Socially complex phenomena are not easily represented by either quantitative or qualitative research alone. Analyzing and comparing different cases provides researchers with the ability to make observations, understand important developments, and make inferences. The key aspect of the historical issue in case studies, however, is to note that a case study is more than a historical event itself, but rather a well-defined aspect of that historical event that the researcher subjects to a disciplined analysis. It allows for tracing sequential processes in order to infer some causality. Studies should be following in a linear path the flow of history as it has occurred. Researchers can then observe this linear path within the framework of the case study in question (Singleton & Straits, 2005 : 192-197). However, case studies, due to their selection by the researchers, are arguably prone to selection bias as well as scope limitations (Bennet, 2004).

1.3.2. A mixed research method

There are elements of both qualitative and quantitative research incorporated into this dissertation's methodological design, which is a combination of case study and interviews. The main or dominant methodology of the dissertation, however, is the case study method, which allows for a

combination of controlled comparisons of relevant events to be compared across several cases.⁹ A comparative analytical study of the particular cases in question would be contributions to the field of research. Finally, the case study framework allows for using available statistical data and the primary data generated from the interviews to be used both qualitatively and descriptive statistics (some elements of quantitative) for comparison. The comparative study of different cases would allow more interdisciplinary contribution by the research (Collier, 2011).

1.3.3 Exogenous shocks: the historical events analyzed in this research

For the purposes of this project, an exogenous shock is an event of historic significance, that is creating a challenge for governments in maintaining their energy security. Shocks causing challenges to maintain energy security that governments face include events such as price shocks, geopolitical events, and natural or man-made disasters. Four historical events over the period spanning 2003 to 2013 are postulated to have causal impact on national policy and energy supply and/or mix of selected countries (i.e. industrialized, relatively advanced, or emerging economies) with considerably different geopolitical and energy resource profiles. These events were chosen not only to show variation across resources (oil, gas, and nuclear power), but also to analyze or demonstrate how the extreme price fluctuation of the dominant energy commodity (oil) would affect policy. The first event is the 2003 US invasion of Iraq. The second is the 2005/2006 Russia-Ukraine natural gas crisis. The third is the extreme crude oil price fluctuation from \$147 in 2008 to as low as \$32 per barrel six months later in 2009 due to the global economic crisis. The fourth and last one is the 2011 March earthquake and tsunami in Japan, which consequently triggered the Fukushima nuclear fallout.

1.3.3.1 The 2003 Invasion of Iraq (including prior diplomatic escalation at UNSC and subsequent oil price hike)

⁹ The case study method is widely used in Business, and International Political Economy, and Environmental Sciences, which are some of the other academic fields where energy security is addressed and research is conducted.

The first event is the 2003 Invasion of Iraq, including the prior diplomatic escalation at UNSC, and subsequent oil price hike. This is the case of a political action by a superpower to invade a supplier country, but one that over time had drastic impacts on oil prices. Due to the importance of the episode in the history of diplomacy and therefore for the discipline of international relations, the few months period of time in late 2002 and early 2003 involving diplomacy at the UNSC (Fischer, 2011) prior to the actual invasion would also be considered and discussed when assessing the effects of the case. It was, however the insurgency, the instability and internal violence in Iraq that caused thousands of civilian and military casualties for many years during the occupation (“War in Iraq begins - Mar 19, 2003,” History.com). The exogenous shock of the Iraqi invasion in 2003, in the discussion of this research, will also include the immediate prior diplomatic tensions in the UN, as well as the gradual rise of oil prices in subsequent years. This is because this exogenous shock created an escalation in diplomatic tensions that was gradually felt by the global markets.

Another post-invasion economic factor that is of special importance within the purview of this research is the resilient increase in oil prices, as continued instability prevented larger anticipated quantities of Iraqi oil from reaching global markets. Prices experienced a gradual rise in the first five years from below \$30 per barrel in the week of 17–21 March 2003 (EIA, 2017) to a record high \$147 per barrel by July of 2008 (Reuters, 2008). Then, the market was shaken by extreme volatility starting in 2009 and lasting until the end of 2016, with some fluctuations during 2009 in the immediate aftermath of the economic crisis in the United States that quickly spread to the eurozone. This volatility represents another “exogenous shock,” as indicated below. Politically, the invasion occurred in the aftermath of the 9/11 terrorist attacks and the subsequent but brief economic downturn that followed. Interestingly, as indicated in Chart 1 below, the global economy in the immediate aftermath of the invasion of Iraq was on the ascent, until an abrupt and sharp decline in the aftermath of 2007.

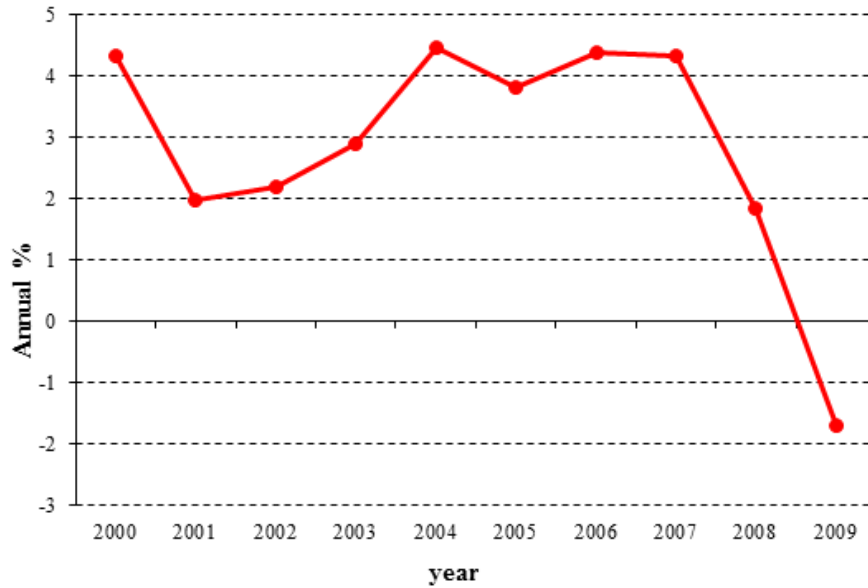


Figure 1. Global economic growth during 2000 to 2009 (World Bank Data: data.worldbank.org, 2017)

This event was thus chosen in order to ask a specific geo-political question to the interviewees to elicit their respective views on the nature of the links between politics and oil prices.

1.3.3.2 The Russia-Ukraine natural gas crisis of 2005/6

This was the first major sign of how energy policy could be used as a tool of political leverage by Russia. Russia was not the first country to use energy supply as a political tool, which was pioneered by the 1973 Arab oil embargo. By 2005–2006, the probability of the issue escalating to a higher level of conflict was seen as very low.¹⁰ This case was initially selected in order to ask the interviewees a specific geo-political question directly linking natural gas and pipeline politics to regional security. The aim was to understand more about their reactions to this crisis.

¹⁰ Neither 2014 Russia-Ukraine crisis over the change of government in Ukraine nor is the subsequent crisis over Crimea is within the purview of this dissertation, as research was initiated and field interviews were completed by 2013. However, subsequent developments between Russia and Ukraine suggest how political circumstances may change over a decade, and that what was considered highly unlikely a decade ago, such as Crimea becoming part of Russian territory, can become a reality.

1.3.3.3 World Economic Crisis since 2009 and the Ensuing Extreme Oil Price Fluctuation

The world economic crisis (sometimes called the “great recession”) continues to mark nearly a decade of global economic stagnation and weak economic growth. The level of price fluctuation is particularly unique, with absolute price swings between peaks and drops ranging over \$100/barrel. The fluctuation between 2008, when oil prices reached historical highs of \$147 per barrel, to the sudden January 2009 oil price drop to below \$50 per barrel, is extreme. This extreme fall is attributed to the global financial crisis and the intense speculation in oil stocks (“paper oil”) before the crisis (Kaufmann, 2011). As such, this swing is an important economic event. As a result, during the interviews, the researcher also gained further insight into the need for energy regulation and a global regulatory institution in the face of speculation and price volatility.

1.3.3.4 The 2011 Fukushima nuclear meltdown in Japan

The Fukushima nuclear disaster (following an earthquake and tsunami) of 11 March 2011 created doubts around the world about the safety and future prospects of nuclear technology. Most pre-Fukushima expectations about the future of nuclear energy pointed to a nuclear renaissance. After the incident, nuclear energy entered an unexpected period of uncertainty (Goktepe, 2012). Even though the results of Fukushima initiated a very serious, profound, and lengthy process of reassessment and reevaluation of nuclear power, it led to very different results across interested countries. While some countries opted for postponing or cancelling new nuclear plants, other countries have continued programs while strengthening the security and safety of the existing plants. The “determination” to benefit from nuclear electricity is observed particularly in the countries newly entering/or preparing to enter the nuclear power technology, including Turkey, but in others as well. The UAE is an example of a non-OECD country that started construction on its nuclear program soon after Fukushima (Dirioz & Reimold, 2014).

1.3.4 The case studies

Mill's comparative analysis of most and least similar case studies served as the methodological guide for case selection. The assumption behind the selection of dissimilar cases was that observing similar policy across dissimilar countries would allow more conclusive support for or refutation of the overarching hypothetical importance of politics (specifically geopolitics) in setting the master framework for responding to the exogenous shocks in question. The characteristic of "least similar" may not necessarily apply to the three chosen cases, as such a claim could be biased based on the different categories one chooses to contrast. In fact, one of the interviewees (Turkey, Interviewee # 17, Istanbul, 8 May 2012) disagreed with the characterization of these three countries as having "least similar" energy mixes.¹¹ However, they do represent three diverse cases with important variations, for the reasons indicated below.

This dissertation examines the Netherlands, France, and Turkey. Turkey, due to the significantly greater data available and thus collected, is the main case. In terms of similarities, all three states are basically industrialized economies. Moreover, the three countries selected as cases for this study are in principle market economies. Among them, both the Netherlands and France are also member states of the EU, while Turkey is still officially a candidate state for EU membership, and is a member of the latter's Customs Union.

On the other hand, these three countries have very different geopolitical and energy profiles. The Netherlands has a relatively small population but developed economy with well-known gas reserves, an important role as a major energy hub in Europe, and no plans for further development of its existing modest nuclear energy capacity. This case study country, due to its geographical vulnerability (low altitude, at times below sea level), also considers "climate security" a more pressing priority (M. van B. Zaken, 2007) relative to France and Turkey. France, on the other hand, is a relatively populous consumer state with heavy domestic reliance on nuclear energy as well as significant capacity to export construction know-how. Finally, Turkey is a populous and

¹¹ S/he suggested to consider "geopolitically" Britain as an island, Germany as a continental country, and to include a transit country such as Turkey or the Ukraine.

rapidly growing country, one focused both on building pipeline capacity to serve as a conduit between supplier and consumer countries and trying to complete its first nuclear plant.

These aforementioned variations should allow for observing different types of DMA and EGA in their responses to maintain energy security in the face of the exogenous shocks. While governments like these would normally be expected to behave differently, similarities or uniformities between the interviewees' responses to the same critical events would be significant.

In this study, 4 different exogenous shocks apply to the 3 countries selected: E.S.1 (2003 Invasion of Iraq, and prior diplomatic escalation and subsequent oil price hike), E.S.2 (The 2005/2006 Russia-Ukraine gas crisis), E.S.3: (World Economic Crisis 2009--today and severe oil price fluctuation), E.S. 4 (2011 March Japan Earthquake, Tsunami, Nuclear Fallout). Elite's perspectives in responding to exogenous shocks are also assessed.

Table 2. Case countries' reactions to exogenous shocks as DMA and/or EGA

DMA = Domestic (i.e. Internal) Market Adjustments EGA =External Geopolitical Adjustments.

	<u>E.S.1:</u> Iraq Invasion2003, & prior diplomatic escalation at UNSC and subsequent rise in world oil prices	<u>E.S.2:</u> Russia–Ukraine Gas Crisis 2005/2006	<u>E.S.3:</u> Global Economic Crisis 2009 and extreme Oil Price Fluctuation	<u>E.S.4:</u> Fukushima Nuclear Disaster 2011
TURKEY	DMA & EGA with lag : alternative supply; Russia and KRG	Weak initial response later DMA : wind energy EGA: TANAP + South Stream	Moderate DMA: REFITS after 2009 long term DMA: EPIAS	DMA & EGA Nuclear; Akkuyu, Sinop and China nuclear cooperation long term DMA: Indigenous energy

Table 2 (cont'd)

FRANCE	EGA: Didn't join the Coalition of willing.	DMA: REFITS , renewables + Flamanville	DMA : talk of "strategic reserves" not implemented.	Questioning nuclear and stop new plants,
	EGA?: TotalFinaElf merger preceded Iraq Invasion	EGA: TOTAL deals with Gazprom in Barents Sea	DMA: renewables	(debate after Flamanville rather than Fukushima); DMA: renewables EGA : interconnection in Europe and in France
NETHERLANDS	EGA with lag: Netherlands' initial support to USA, later Europeanization of Security	EGA: Europeanization of Energy Security; Netherlands wasn't that affected and did not want to blame Russia.	Not at first: Shell is MNEC and port of Rotterdam is major hub Seismic activity of Groningen	No 2nd nuclear plant EGA: (New import options: i.e. Shale Gas from USA). EU solidarity
		Some DMA: certain new plants were built	DMA: renewables EGA: Europeanization.	

NOTE: Europeanization of Politics is classified in the above table as EGA, however it is neither ‘domestic nor internal’, but it’s not necessarily geopolitical either. Here the Europeanization is an ‘exception’ that is unique to EU members and the Energy Union, but not applicable to Turkey.

It is important to consider that one common option for France and Netherlands, the “Europeanization of Politics,” has been a response in many situations that Turkey did not or could not pursue. This is primarily because Turkey is not a member yet (and less likely to become one anytime soon), and because of distances with the EU’s Energy Union and TTIP attempts with the United States (although those are now uncertain and unlikely to materialize under President Trump).

1.3.5 Agency issue and elite interviews

Key answers to why governments favor geopolitical or market mechanisms reside in the agents acting on behalf of governments and other key decision-making institutions. As described by Checkel (2006), one can observe correlation, but not causality (for example, how democracy causes peace). Interviews shed light on agents’ perceptions of the structure of the international system and market mechanisms that operate within this system. Furthermore, comparative historical methods in general, and case study method in particular are used to understand government responses.

Thus, research for this dissertation also featured relatively uniform interviews, all containing the same open-ended and semi-structured questions related to the same exogenous shocks, with elites - specifically energy policy practitioners and observers -- from across the studied countries in order to better measure relevant perceptions, and preferences. Collecting qualitative data through interviews (event with open ended questions) generated a wealth of primary data that could be aggregated into statistics to indicate preferences. As such, data compiled from the original responses could be compared to official announcements, news reports, articles, etc. in order to identify and analyze any discrepancies. At least eight elites per case in the selected countries were

interviewed for a total of 38 interviews (covering 37 individuals).¹² Two broad categories of interviewees consisted of practitioners (government representatives) and observers (academics, NGOs, corporate executives, journalists). Interviews were conducted in English, French, and Turkish.

In this dissertation, the researcher had the opportunity to conduct field research in France and in The Netherlands, in addition to the main case of Turkey. The results of the interviews suggest that exogenous shocks in the global energy sector, as shown in the oil crises, do influence policy. One common theme repeated by several interviewees related to the need to have effective regulatory practice and international regulatory cooperation (such as by creating IEA). Regulation and regulatory practice were, at the onset of this research endeavor, not considered an important factor shaping policy, nor are they a primary scope of this research. Upon closer consideration, however, they may potentially serve in the long run as a channel for closer agency and structure interaction. Collaborations by the energy regulatory bodies at an international level may be interesting subjects for further research as forums for trust building and institutional collaboration according to the sectoral needs of the member institutions.¹³

1.4 The structure of the dissertation

This research examines how governments respond to exogenous shocks given their vulnerabilities and sensitivities in the area of energy security. Comparative case studies of decisions made by the governments of Turkey, France, and Netherlands control for differences in energy mix. SWOT analysis would display their sensitive and/or vulnerabilities. Interviews were conducted of to

¹² The aim was to conduct at least around 8–10 interviews per country, but exact numbers varied by case study. The main case Turkey produced 15 interviews, the Netherlands 12, and France 9. There were also 2 non-case-study interviews from Italy and Russia. One interviewee (FIRAT/TARIF) was qualified to provide interviews for both Turkey and France. Thus, there are 38 interviews but 37 individuals (real persons) interviewed.

¹³ National regulatory institutions face similar challenges and tend to collaboratively share experiences. Regulatory professionals/technocrats, thus have similarities their approaches. The Academy of Regulatory Professionals under the University of Florida's Public Utility Research Center (PURC) is an example. The PURC/World Bank International Training Program on Utility Regulation and Strategy. (<http://warrington.ufl.edu/centers/purc/training/itp.asp>, accessed 2 January 2016 23:47 EST) is beyond a training program. It's an international forum where ideas are exchanged and experiences are shared.

understand policy responses to external shocks. In order to conduct the inquiry based on the methods and arguments described above, the rest of the dissertation conforms to the following layout: Chapter 2 proposes an understanding for analyzing the nature of temporal differences in governments' policy responses to an exogenous shock. Chapters 3, 4, and 5 focus on analyzing responses to these shocks in the specific case countries, respectively Turkey (the main case), France and Netherlands. These chapters precede a brief overview chapter.



CHAPTER 2

THEORETICAL APPROACHES TO ENERGY SECURITY

This chapter provides an overview of the lacunae in the literature on energy security. In the first part the concept of energy security is discussed within the theories of International Relations and the general concepts of International Political Economy. Based on my case studies, I observe how governments respond to exogenous shocks in order to maintain their energy security. Review of the literature suggest that while earlier works focused on energy security and geopolitics, later works also looked at markets and institutions, and even later ones at the global environment (Van de Graaf & Colgan, 2016). This research proposes a conceptual approach to understanding energy security's intertemporal differences. The findings will also provide insight into the understanding of this issue (how government respond to exogenous shocks) by elites.

2.1 The concept of energy security in 'international relations' theories

Energy security is an important security challenge faced by governments in Eurasia. Both the European Union (EU) and the North Atlantic Treaty Organization (NATO), the two fundamental organizations of the Euro-Atlantic community, attach importance to emerging security challenges related to energy in their planning process.¹⁴ The plans for achieving an 'Energy Union' are a top priority for the European Commission (*Energy Post*, 2016). For energy security, it is significant to clarify links with geopolitics. One encompassing yet concise definition of geopolitics would be to

¹⁴After the 2010 Lisbon Summit, NATO has created a new division on 'Emerging Security Challenges', which has a section for Energy Security. NATO Official Website: www.nato.int; and NATO's New Strategic Concept adopted on 2011 November 19-20 in Lisbon by Heads of Governments, "Active Engagement, Modern Defence: Strategic Concept for the Defence and Security of the members of the North Atlantic Treaty Organization" NATO Public Diplomacy Division, 1110 Brussels-Belgium. www.nato.int — www.nato.int/ebookshop (Security Environment Section, item 13. Pg.12).

consider it as “a struggle for space and power played in a geographical setting” (Kaplan, 2014). Hence, geopolitics inherently implies the role of geographic settings for politics and power rivalries. Kaplan further explains the different types of geopolitics, such as military, diplomatic, economic and energy geopolitics. He identifies the role of natural resources and their access via channels of trade to consumers as critical. “Every international order in early modern and modern history is based on an energy resource”(Kaplan, 2014). Coal in the 19th century and petroleum in the 20th century were the prime resources of the international order. It is a possibility that natural gas (conventional and unconventional) or renewables could be the main energy resource on which the new international order and the geopolitics of the 21st century would be centered. Consequently, possession of natural gas as a key strategic resource would be a key factor in understanding power rivalries at the systemic level. Bearing in mind these general possibilities, the dissertation would focus on the geopolitics of the early 21st century and exogenous shocks were chosen from that period.

For the purpose of this research, geopolitical responses (or EGA) include maintaining strategic reserves or signing intergovernmental agreements to initiate major energy infrastructure projects (such as the TANAP). The role of latter has been described as an important issue (Klare, 2002, Houweling & Amineh 2007, and Amineh, 2003). Yet geopolitics as a resource war or an “econocentric” approach to accessing raw materials (Klare, 2002 : 8) does not clarify the multi-dimensional approaches of energy security and there is not agreement on the subject. For instance, Amineh’s account is closer to a Constructivist point-of-view, whereby critical geopolitics can be geographic arrangements as a form of social construction (Amineh & Houweling, 2005; Houweling & Amineh, 2007). While both econocentric and critical geopolitics give importance to “demand-induced scarcity,” they differ on the role of territorial control as opposed to trade creation in maximizing access to these resources.

Complexity makes it necessary to have a multifaceted approach to the concept of energy security, and including International Political Economy (IPE). Energy Security is a notion that requires explanation beyond simply resource competitions (Ciuta, 2010). Energy security is more complex than simple access to raw materials. It is a concept in and of itself multifaceted and multidimensional, aimed at preserving both economic and political interests (Billon, 2004). The

aims are thus not just geopolitical or supply security, but also market stability in order to foster trade and investment. Thus, mitigating risks in energy security necessitates including physical access and infrastructure security, as well as market stability and economic interdependence based on strong trade bonds.

Technological developments can alter expectations by changing the ability to extract unconventional oil and gas. If resources that were not previously recoverable at an acceptable cost become recoverable, this would greatly alter the extant geopolitical balances. Furthermore, if there was a technological breakthrough in a new form of energy (such as renewables becoming more affordable), then fossil fuels would become less significant. Such revolutionary changes would change the rules of the game and in that case, expectation of intensifying geopolitical competition would no longer be plausible. The consequences of low prices on energy exporting countries have been highlighted by academics in different theories of International Relations. For instance, according to Buzan and Hansen (2009 : 270):

If one assumes that the salience of environmental issues is on the rise, then the technologies associated with disease control and climate change could become as central to ISS (International Security Studies) discourse as those of nuclear weapons once were. If global warming is the problem, then 'energy security' might well come to mean not access to hydrocarbons, but the availability of energy technologies with low carbon footprints, and/or the availability of technologies for reducing greenhouse gases in the atmosphere. Developments along these lines would, among other things, diminish the strategic significance of oil and gas, and with them the strategic significance of the Gulf and Russia.

Hence, changes in the energy system would alter the strategic significance of certain resources. For example, coal and steel were the strategic resources until the 1950's, with Alsace Lorraine being a renowned hotbed of political rivalry between France and Germany from 1871 until after World War II. Coal was eventually replaced by oil (petroleum) as the more strategically important resource, but the change was gradual, and the historic significance was not evident until the 1973 Oil Crisis (Zietlow, 2015). The decrease in recent oil prices was not simply due to a growth in

renewables, but also due to additional supply from unconventional methods (such as shale) available to the market at a time of low demand.¹⁵

Energy issues inform not only International Politics, but also domestic politics and economics, and therefore concern different levels of analyses as described by Kenneth Waltz (2001). Furthermore, looking at different aspects of energy security would be useful in addressing both geopolitics and markets. For example, whereas Klare, (2008) accounts for these issues in International Politics and the rise of China and India as competitors for scarce energy resources, Haghighi, (2007) examines the legal effects of energy transit agreements on the contracting parties, and Evans, (2008) classifies the different features of renewables and alternative energies, and discusses the politics of Energy and Environment at the IO level, as discussed in Dirioz (2012). All three address the question of how to ensure access to secure and uninterrupted energy at affordable prices. Goldthau and Sovacool, (2012) are an example among many scholars who discuss the uniqueness of energy security and its role for political economy.

The types of energy resources vary greatly and geography also comes into play because resource availability shapes a country's domestic energy mix and available options to diversify from among foreign sources. This could affect or limit their possibility of achieving greater energy independence, which could have structural-modification effects *qua* material capabilities. As implied by Waltz (2001 : 167-169)'s logical differentiation of balancing modalities, attempts to develop domestic resources signify a form of domestic restructuring to balance import dependence. For example, the United States' recent revolutionary breakthroughs in shale oil and particularly shale gas over the last decade largely permitted the US to re-domesticize its energy supplies and the US may be on its way to becoming a net exporter of oil again (EIA, 2017).

¹⁵ The importance of natural gas in particular, with the rapid growth of unconventional (shale) type gas mainly in North America, but with potential in other parts of the world as well, was highlighted by the International Energy Agency (IEA, 2012).

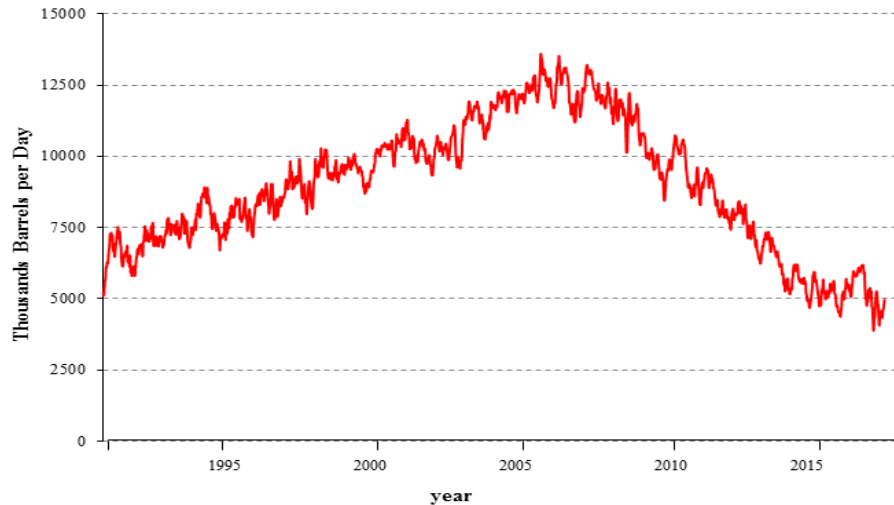


Figure 2. 4- Week Averaged US Net Imports of Crude Oil and Petroleum Products (thousand barrels per day) (<https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=>, 2016)

Hence, an interdisciplinary approach, including economic and political perspectives, is desirable for understanding exogenous shocks on energy security. Dealing with a broad issue from only one explanatory angle would at best provide an incomplete account.¹⁶ In an interdisciplinary approach to global energy security, however, International Relations theories and International Political Economy (IPE) provide a framework for understanding the debate on economics and geopolitics.

The approaches used by Neoclassical Realist theories are particularly useful to assess geopolitics and governments' responses while accommodating non-security related factors. In that respect, the Realist paradigm would firstly be discussed in general, and followed by the Neoclassical Realist paradigm in particular. Then Liberal paradigm would be discussed, followed by a section on energy market and political economy. Finally, the new approach offered in this dissertation would be presented in the final part of this chapter on theoretical approaches to energy security.

2.1.1 Realist paradigm

¹⁶ An example of such interdisciplinary collaborative experience is EIRSS GRONINGEN 2012 CONFERENCE, where many academics and PhD Candidates from different fields such as Economics, IR, Political Science, Law, Environmental Sciences, Sociology, Psychology, Business Administration, etc presented different views on global energy transition issues.

Realism in its most classical rendition dates back to Thucydides' account of the Peloponnesian Wars between Sparta and Athens. Thucydides' account is an early example of balance of power theory and the security dilemma (Lebow, 1984). Indeed, balances, coalitions, and geostrategic competitions, conflicts and war over resources have been important areas of study. As such, both hydrocarbons and renewables remain central to national security calculi (Peters, 2004). Energy security sometimes gets incorporated into treatments of geopolitically intensive "resource war" (Billon, 2004), but rarely figures as a concept in and of itself. The national security or policy objective of reducing energy dependence has analogies with Kenneth Waltz's (2001 : 168) seminal differentiation between internal and external balancing:

... Russia and America (they) balance each other by 'internal' instead of 'external' means, relying on their own capabilities rather than on the capabilities of allies.

...Internal balancing' is more reliable and precise than external balancing. States are less likely to misjudge their relative strengths than they are to misjudge the strengths and reliability of opposing coalitions.

Waltz explains why and when internal or external balancing can be used. One can infer that internal balancing encompasses or presupposes the capacity or ability of states to extract enough of their own resources. By relying on internal balancing, countries can more reliably calculate their relative capabilities. On the other hand, the formation of coalitions represents a type of "external balancing" within an international system and implies a certain level of military interdependency within an alliance or block.

These alternative modalities of balancing, as conceptualized and delineated by Waltz (2001 : 168), comprise a key point of departure for Neoclassical Realism, especially in terms of the latter's focus on resource extraction as described by Taliaferro (2006). This concept focuses chiefly on taxation and the ability of the state to extract taxes. For instance, Prussia is an example a state which originally had noncontiguous territories and lacked defensible borders, offsetting these vulnerabilities by developing efficient state institutions that were able to extract resources from domestic society (Taliaferro, 2001). The neoclassical strand of Realism differs from Neorealism in many ways but the importance attributed to institutions is one of the most fundamental differences

between them (Schweller & Priess, 1997). In fact, structural modifiers (see below), despite including natural resources, are more often related to the strengthening of institutions (including general domestic policies designed to build more robust internal capacity in similar fashion to internal balancing) in order to extract societal resources more efficiently (Taliaferro, 2006). This concern for institutions is not unique to Neoclassical Realists, however, and in fact, as mentioned by Schweller and Priess (1997), it belongs to Neoliberal Institutionalists as well. Other Liberal and Economics-centered approaches also highlight the role of institutions (Rodrik, Subramanian, & Trebbi, 2004). Interestingly, the Neo-Classical Realist focus on policy instruments neglected primary physical modalities of extraction – that of natural resources from the ground or, via technological innovation, from some other natural medium (sun, wind, water, etc.). While taxation and thus institutions play an important role, the physical availability of the natural resource in question serves as a more primary parameter. Notably, an oft-proclaimed aim by numerous importing-consuming countries to obtain greater energy independence from foreign energy imports signifies a preference for engaging in a type of internal balancing.¹⁷

On the other hand, states lacking a sufficient natural-resource endowment to develop alternative domestic energy supplies may resort to a type of “external balancing.” External balancing can be done via diversifying the range of their foreign suppliers of one or multiple imported resources, but buck-passing and bandwagoning risks may also be present in the context of foreign energy relations, thus rendering external balancing less efficient. The connection between Energy Security on one hand, and the concepts of internal and external balancing as well as structural modifiers on the other, remains elusive and implied. The original ‘Term Structure’ approach in this research endeavors to provide a clearer distinction between internal and external balancing and energy security. For this purpose, it is necessary to take a closer look at the literature on Neoclassical Realism below.

2.1.2 Neoclassical Realism

¹⁷ President Trump’s “America first” energy plan could be cited as an example (Bruegel, 2017).

Neoclassical Realism gives more attention to agency than the predominantly structural approach of Waltz's Neo-Realism. Agency and elite perception and misperceptions might lead to policy mistakes, according to Schweller (2004), who describes how a combination of buck passing, appeasement and other policies were used by the United States and Britain when faced with the rise of Nazi Germany before World War II. U.S and Britain did not effectively deter Nazi Germany from continuing its military build-up. Once strong enough, Germany pursued aggressive foreign policies. This was in part because of a "misjudged" threat perception. Schweller (2004) clearly points to the importance of elite misjudgments; hence, elite perceptions of apparent threats or problems do matter. Therefore, conducting elite interviews to understand concerns or the lack thereof by policy makers is a way to understand how elites might perceive certain debated issues differently. For instance, as later described in this dissertation, the elites interviewed generally displayed less concern than the general public or the media about the dangers of nuclear energy.

Relative power capabilities and the perception of a particular country's power are equally important as it is very difficult for states to measure each other's power capabilities with full accuracy (Rose, 1998). Neoclassical Realism is related to geopolitics, which sees indigenous material capabilities (such as territory and raw materials) as critical for states' self-sufficiency. Geopolitics, as summarized by Schweller (1996), was adopted from German theorists such as Karl Haushofer who established *geopolitik* in late 19th century post-Bismarck *realpolitik* political era. It can be deduced that *geopolitik* mainly concerns state survival. For *Lebensraum* (habitat), states compete in a constantly evolving international political arena (Weigert, 1942 : 13-14; Schweller, 1996 : 96-97). Within this evolutionary process, state survival depends on their ability to ensure enough territory, population, and raw materials for economic self-reliance (Schweller, 1996 : 96-97). In relations to the internal and external factors as mentioned earlier, geopolitics is a social phenomenon, like nation-states, that set the borders on geography. In the words of Cowen & Smith (2009 : 22): "Geopolitics needs to be understood as historically emerging from and helping create a 'geopolitical social,' which both crosses and crafts traditional borders of internal and external to the national state."

Geopolitics can be seen as a forerunner of Neoclassical Realism, given the importance put on raw materials by the latter to assess a state's relative power within the international system. However,

there are differences in the depth of their respective treatments of raw materials. Most of Neoclassical Realist literature treats raw materials as a general potential asset or resource. On the other hand, scholars writing on energy security, such as Yergin (2006), have elaborated, without situating their accounts in an explicit theoretical framework, on the different types of raw materials and geopolitical challenges related to them.

An important contribution of Neoclassical Realism to the Realist paradigm is the further development of the resource extraction concept. Neo-Realists such as Waltz (1993) tend to assume that states are “like” units (the billiard ball analogy). However the resource extraction model treats states as different in terms of material capabilities and also how efficiently they can use those materials available to them. Interestingly, earlier Neoclassical Realist literature did not address the “obvious” feature of energy security. This resulted from Neoclassical Realists’ treatment of raw materials as undifferentiated mass assets that could potentially be mobilized rather than as particular resource types, and thus they neglected detailed analyses of their divergent political implications. In one description of “structural modifiers,” Snyder (1996) suggests that:

They (Structural Modifiers) are system-wide influences that are structural in their inherent nature... They modify the effect of the more basic structural elements on the interaction process, but they are not interaction itself. They are roughly analogous to macroeconomic influences, like interest rates or governmental regulation, on microeconomic relations between firms; they affect the behavior of all actors more or less evenly, but they are different in kind from factors like the number of actors (firms) and the distribution of power among them—variables which clearly determine the structure of the system (market).

Snyder (1996)’s reference to “structural modifiers” as analogous to macroeconomic influences or microeconomic regulation is a critical conceptual point of departure for international “energy regulation institutions” as discussed in the conclusion. Snyder (1996) also takes a closer look at norms and institutions. He labels them as structural in a domestic society because they create a hierarchy of power. Norms and institutions are also structural at the international level since they have similar influence on all actors. By the same token, technology can also be treated as a structural modifier, as changes here may affect the distribution of power amongst the units (nation-

states/governments). Other descriptions of structural modifiers gravitate towards the issue of access to raw materials. For instance, Taliaferro (2001) describes structural modifiers as material factors that may increase or decrease the likelihood of conflict, arguing that these modifying factors include; “offense-defense balance in military technology, geographic proximity, access to raw materials, international economic pressure, regional dyadic military balances, and the ease with which states can extract resources from conquered territory” (Taliaferro 2001 : 131).

Taliaferro (2001, 2006) also included acts of balancing through alliance formation because alliances can affect system-level power balances. The concept of “structural modifiers,” in the case of alliances becomes mostly external balancing, but in Taliaferro (2001)’s example it mostly refers to internal balancing, because although he points to how states could re-organize either by improving domestic capabilities or forming external alliances. However, there’s no reason why material resources cannot include natural resources and implicitly or indirectly relate to energy security. As indicated above, Taliaferro (2001) does list access to raw materials as one such factor, but does not discuss it in detail nor further specify these raw materials. If one were to extend that argument to encompass specific energy resources, it could be argued that what OECD economies are actually engaged in doing with their foreign energy policies is a type of internal “balancing” – that is, improving domestic capabilities, for example, by building wind turbines or nuclear power plants to lessen foreign energy dependency. Putting more domestic energy resources and infrastructures into the energy mix in order to reduce import dependency is particularly important for achieving energy security. For example, development of renewable energies and nuclear energy fits within the “internal balancing” logic as well as Neo-Classical Realism’s concept of structural modifiers, which can modify the way states balance power at the systemic level (Taliaferro, 2001, 2006). By the same token, few of the early Neoclassical Realist scholars took analytical or conceptual note of the possibility that, by diversifying the types of resources and supplier countries, countries could be pursuing a type of “external balancing” through alliance formation. For instance, Turkey and Azerbaijan through the earlier BTC project and later TANAP project may be engaged in a very specific type of alliance formation, or South Korea and the United Arab Emirates (UAE) may be forging some sort of informal alliance by having a South Korean consortium build four nuclear power plants in the UAE. These actions also are described within the context of this research as EGA.

There is an emerging Neoclassical Realist-inspired literature in the area of energy security. Paralleling the increasing attention given to energy resources and their relationship to foreign policy over the last 6–7 years, studies applying a Neoclassical Realist approach to energy security started to appear more frequently in the discussion of energy resources in foreign policy at a theoretical level (Česnakas, 2010). Notably, one Neoclassical Realist study of China's foreign policy highlights China's need to ensure access to energy and natural resources in order to sustain economic growth (Sørensen, 2013). Others have addressed Russian foreign policy and natural gas-export policies through a neoclassical realist viewpoint (Nygård & Rasmussen, 2011). However, although its importance is mentioned, the concept of energy security has not been treated in analytical or conceptual depth. Overall, resource extraction in Neoclassical Realism is seldom identified with energy security and energy independence. However, states' ability to extract natural resources that are strategically and materially significant is an important and seemingly obvious aspect of energy security that has apparently been neglected. We can effectively apply this model to energy security and energy geopolitics, making Neoclassical Realism a useful theoretical framework in the many areas of energy security as well. Although "structural modifiers" are located primarily at the third level of systemic level of analysis, because of their potential implications for the distribution of power at the international level, DMA and EGA of this dissertation may under certain conditions be substantively congruent and linked with "structural modifiers" as identified by Snyder (1996). For instance, if the Turkish government is successful in developing its natural gas markets, then and becoming a hub and a regional natural gas trade center as aimed by the national policy ("Milli Enerji ve Maden Politikası," SETA, 2017), then Turkey would change the structure of the international system and international political economy by becoming a new center for global natural gas (the way Rotterdam is today). It's worth noting that developing a domestic market to become a center of attraction for international finances can be considered a long term DMA in response to several exogenous shocks such as the crises between Ukraine and Russia, but more likely from the winter interruptions of Iranian gas to Turkey.

Another example is the concept where Cheon and Urpalainen (2015) discuss how and when states invest in Energy Security. They use the term "investment," which can be viewed as a form of both internal and external balancing. A state can invest in developing new facilities or in forming

alliances as a preference for “balancing” certain events. For example, one state invests in material infrastructures, whereas the other invests in cultivating a relationship. Cheon and Urpalainen (2015)’s hypothesis can be summarized as follows:

If military disputes increase, then investments should increase. Moreover; specifically in the case if the share of Middle Eastern Oil Supply & Production increases, then other countries need to invest more in energy security.

If these investments aforementioned are by domestic means and domestically involved (such as natural gas storage infrastructures), or providing REFITs to promote domestic investments on energy, such as wind energy initially developed in 1998 in the Izmir region (Kısar, 2016), then they would be mostly doing DMA. However, if the ‘investment’ is to a relationship in an alliance-type behavior, signing intergovernmental agreements or contracts, then the investment is mostly EGA. Thus, DMA and EGA may be substantively congruent and linked with “structural modifiers” with the example of a state investing (or promoting investment) internally in new facilities and infrastructures (DMA) or forming alliances (EGA) and thus in a sense invests in cultivating a relationship. In both cases, there is a ‘balancing’ and change of capabilities of that state. When that balancing is strong enough to change the international structure, it may be in a sense a form of ‘structural modification.’ In that respect, it’s useful to refer back to how Snyder (1996) understands relationships and explains change, by understanding unit-level variables and state behavior. “According to Snyder, principle components of relationships are alignments and alliances, common and conflicting interests, capabilities and interdependence” (Spiras, 1996 : 417). Furthermore, structural modifiers, which could be elements such as institutions, norms or military technology, suggest that “the extent that unit-level variables have substantial effects on the system, they can be thought of as being structural” (Spiras, 1996 : 417). Likewise DMA and EGA, if they have substantial effects on the system, they can potentially modify the structure of the international system.

In the complexities of energy security, LNG and nuclear energy also have certain important and to some degree unique features. For this dissertation, both are considered essentially EGA because they involve a government or state owned enterprises dealing and developing relations with another government or state owned entity. The exceptional countries for nuclear, however include

France because the latter is able to realize nuclear investments without conducting alliance-type behavior with another country and is able to realize the investment by solely domestic means. These would be further discussed under energy market and political economy in section 2.1.4.

Another relevant example of ‘investing’ in new technology goes back to the British Navy before and during World War I. In the years leading up to and during World War I, in order to ensure energy security to maintain a speed advantage over other navies, it converted from coal to oil, and had to rely on distant Persian oil as opposed to local coal from Wales. This is an archetypal geopolitics account (Yergin, 2006). The role of the BTC was further described as such by Klare (2002, 2008). However, there are other accounts of energy security in the field of International Relations. As discussed below, the Liberal paradigm provides another comprehensive framework for understanding exogenous price shocks and other economic factors.

2.1.3 Liberal paradigm

Interdependence theory within the Liberal paradigm treats energy policy as part of foreign economic relations and trade. Complex Interdependency focuses in part on the role of the markets and views the “commercialization” of energy and raw materials, advances in technology, and increasing interdependency and cooperation as solutions to strategic dilemmas. Keohane and Nye (2001 : 20-25) identify the three main characteristics of Complex Interdependence as:

- 1) “multiple channels” connecting societies;
- 2) “absence of hierarchy among issues” (i.e., low politics are not always dominated by high politics);
- 3) and the “minor role of military force” (i.e., governments unlikely to use military force against countries with which they have complex interdependent relationship).

This body of literature focuses on sources of “sensitivities” and “vulnerabilities” in the foreign economic relations of countries (Nye, 2008; Nye & Keohane, 2011), which are relevant to governments’ energy-security profiles. For instance, Turkey imports 93.3% of its oil and 98.6% of its natural gas, making its overall energy economy highly import dependent (IEA, 2013). As such

this is clearly an important point of vulnerability for Turkey. Analogies to sensitivities and vulnerabilities in complex interdependent relations have been used by various scholars. The relationship between the EU and Russia has been very frequently termed as an interdependent relationship (e.g. Proedrou, 2007).

Another pertinent theory, which derives from the democratic peace theory, is the capitalist peace theory. Gartzke (2007) suggests that there are two traditions of Liberal Peace, namely the political and the economic traditions. The political tradition takes political regime in Kant's thinking as the underlying reason for international peace, while the economic tradition argues that market-oriented states are not interested in war. According to research in the Capitalist Peace (or Economic Peace) literature, the separate peace between the relevant countries is not attributable to their shared democratic qualities, but rather to their contractual economic relations (Gartzke, 2007).

Mousseau's (2013) statistical argument suggests that relations between most countries analyzed from 1961 to 2001 do not necessarily show a correlation between democracy and peace. Rather, the capitalist peace foresees contract-intensive economic structures and relationships in the international arena forming an important motivation for states to avoid war.

Given the role of institutions, international collaboration and economics for the liberal paradigm, the European Union is often seen as a champion of markets and liberal policies.

For instance, in a press conference on 14 September 2009, Pierre Lellouche, France's Secretary of State for European Affairs between 2009 and 2010, affirmed how energy lay at the origin of the European construct:

Energy was at the base of the idea of the European construct, which began with the ECSC (Coal and Steel) and the EURATOM. The Coal and Steel were at the origins of many wars and conflicts between European countries. Today, we are in a situation of at the same time great heterogeneity in energy politics (Lellouche, 2009).

For instance, the role of markets and market liberalization both at the European level and for the EU's neighborhood have often been considered a primary strategy of the EU. According to McGowan, (2008), markets and liberalization are considered a means of ensuring Energy Security at the European level:

...the Commission has stressed and the Council has endorsed the central importance of market liberalisation as a means to the end of ensuring supply security.

Moreover it has sought to project the principle of open markets beyond its borders by negotiating agreements with neighbours and other countries involved in the production and transmission of energy for consumption in the Union.

The Liberal paradigm is very important in understanding how institutional cooperation, such as energy regulation, may in the long run provide a framework within which energy trading markets would better operate. The issue of institutional capacity building to remedy the “oil curse,” a topic touched on earlier, is largely informed by Liberal approaches to the political economy of energy.

Like the Liberal and Institutionalist scholarship, this research also assumes a Neo-Liberal economic world order in day to day financial market operations, which have significant impacts on governments. The role of ‘external shocks’, as indicated by Krugman (2009 : 21-22) is key in shaping possible economic policies by governments in their responses to these external shocks, such as global economic crises. The focus of this research centers on policy tools to understand the particular role of energy resources such as oil that distinguish them from other natural resources (Nye, 2004).

In the conclusion, the role of institutions will be discussed as an important dimension for increasing global energy security (Sovacool et al., 2011).¹⁸ The Liberal Theory can also be treated within the “Term Structure” approach as being consistent in many senses with the Realist Paradigm. Furthermore, the Term Structure approach intuitively considers how internal and external balancing may be used to reduce the Liberal Paradigm’s ‘vulnerabilities’ in a complex and interdependent relationship (at a bilateral, regional and global level). However, there is still a debate as to which one may be of primary importance, geopolitics or the markets. According to the Term Structure approach, the issue should be considered intertemporal, as described by Bolukbasi and Ozcurumez (2011). Prior to a discussion of markets and geopolitics, it is useful to discuss the concept of energy markets.

¹⁸ Their 5 optimal dimensions of Energy Security include Regulation as the 5th.

2.1.4 Energy market and political economy

In the discussion of the concept of energy market, it is useful to ask the following two questions; what is an energy market and what are its fundamental components? The market is the medium through which suppliers and consumers set prices by communicating quantities supplied and demanded. It's the "Collection of buyers and sellers that, through the forces of supply and demand, determine the price of a product" (regulationbodyofknowledge.org 2014.). Energy markets, like many markets, are markets where supply and demand of energy related goods, services or products determine price. Key governmental and financial institutions, such as stock markets and regional transmission organizations (RTOs) facilitate transactions. The energy market is complex with many sub-markets that even at the national level include differing sectors such as the electricity, oil and gas markets. These sub-markets are becoming increasingly interconnected with each other and with regional and global markets:

Energy industry is global with increasing interconnections of electricity and pipeline networks, increased trade of oil, products, and natural gas (both in liquefied form as LNG and via pipelines); climate change is another factor that brings countries together to focus on emissions from the energy industry (Atiyas, Cetin, & Gulen, 2012 : 1).

Such complex and multi-layered energy markets involve a combination of domestic, regional and global trades. Global energy trade includes fungible commodities such as the interconnected electricity (power) markets, and long term purchasing contracts such as transnational pipelines for natural gas. The wholesale and retail markets for fuels used in air, land (automobiles, trucks, trains, etc.) or maritime transportation are factors determining petroleum (oil) prices. Petroleum, the most widely used energy resource, involves a complex logistic chain where it is explored (upstream), refined and then distributed in retail gas stations (downstream). In the global petroleum market, there are also dominant actors and cartels such as OPEC that make the global energy market oligopolistic. All these differences affect the way energy is traded and financed. As a consequence of this heterogeneity, energy prices traditionally driven by oil are increasingly set at sectoral level.

There is another nuance between the dynamics of international energy trade and their relation to the national energy market. International prices influence domestic prices, but domestic demands also have impact on international prices. For instance, “the rapid growth of the residential sector and demand for private vehicles is likely to exacerbate China’s reliance on imported petroleum products” (Ma, Oxley, & Gibson, 2009 : 1796). This is an illustration of how domestic market dynamics of emerging economies such as China, and similar domestic needs, are driving the demand to import. This, in turn, would reflect as additional demand in the global energy markets.

In energy markets, market based prices rarely reflect the operation of competitive markets. In most markets, the conditions for market based prices are “set by individual decisions among buyers and sellers in a competitive market” (regulationbodyofknowledge.org, 2014). ‘Competitive markets’ are further defined as “markets with competitive conditions: large number, suppliers, easy entry, and relatively homogeneous products” (regulationbodyofknowledge.org, 2014). This does not necessarily apply to energy markets. Worth noting, though, is the difference in price setting in domestic and global markets. Typically, a domestic market is competitive in the demand side, but on the supply side is monopolistic or oligopolistic. This leads for certain cases in a domestic market (often due to socio-economic or political considerations) to governments setting price caps through rules and regulations imposed by their national institutions. By contrast, prices are set in the regional / international marketplace, which tends to be oligopolistic on both the supply and demand sides.

Energy commodities are special commodities (Nye, 2004) that are also highly traded in global financial markets. Considering international energy trade once again, it is useful to answer the question regarding how energy trade is financed. For example, concepts like paper oil, or derivatives, are different instruments in energy trade (Buyuksahin & Robe, 2011). The deal could be a bilateral transaction between sovereign states. Even there the exchange could be a deal of cash or barter (so not always a simple exchange of resource and money). For example, in the 1990’s Iraq under Saddam Hussein’s regime was subject to UN sanctions but was permitted to barter oil for food. UNSC in 2003 lifted sanctions on Iraq with the adoption of resolution 1483 (2003) (UN Office of the Iraq Program, November 2003, accessed 28 March 2017). Thus, energy related deals

and contracts are also complex. Scandals involving Total and the oil for food program would briefly be discussed in Chapter 4, as they have since affected the share prices of Total.

Energy commodities in global financial markets may be potentially subject to speculation. As mentioned above, the energy markets are characterized by their heterogeneity and difficulty of market entry. On the other hand, there is also little “control” or oversight on global price fluctuations such as oil prices, making them susceptible for speculation. This speculation was evident in the aftermath of the 2008 world economic crisis. Speculation was considered an important factor in the collapse of oil prices, and heads of states and governments searched solutions to prevent future extreme fluctuations due to speculation. For example, French President Sarkozy and British Prime Minister Brown wrote a joint article addressing the risks of price speculation and jointly called for international regulation on the issue (Brown & Sarkozy, 2009).

By comparison, in domestic markets, other than price caps, taxations, unbundling and market liberalization, other factors such as reserves and physical storage capacity also determine prices. It is worth noting that gas storage needed for harbors with LNG liquefaction and regasification processes or storage tanks, like the floating storage re-gasification facility (FSRU) and Lake Tuz storage in Turkey, are man-made (*Daily Sabah*, 2016, 2017). They are as such also infrastructure that are mostly DMA. Reserves, by contrast, could be man-made or natural, and strategic reserves can be usable and extracted or kept underground). The storage capacities and infrastructure reflect the pricing of energy products that are traded as actual goods, but also as paper-derivatives in the financial markets. Heterogeneous markets for logistics and transportation, as well as the electricity needed for IT and communications, are diverse. Therefore there are financial institutions dedicated to the trade and exchange of real-time and futures market derivatives, such as the recently created EXIST/EPIAS in Turkey (“Enerji Piyasaları İşletme A.Ş.-EPIAŞ,” Energy Exchange Istanbul). Financial markets are key institutions in the determination of energy prices. Creation of such stock markets is essentially DMA in the complexities of energy security.

The complexity of energy markets and energy security is best illustrated in this dissertation in the characterization of LNG as a short term EGA. Energy markets involve interplay of both domestic and external factors. They are important to consider both for the markets and geopolitics approach

and in the EGA-DMA analyses (section 2.2 below), but are essentially DMA. On the other hand, this doesn't mean that all the resources traded in that market are automatically DMA. For example, the import of additional resource (such as LNG imports, including spot-LNG) is an example of short term EGA. Importation of LNG is considered as a short term EGA because an imported product is externally supplied to feed the domestic market as a stopgap response to an exogenous shock. Imported LNG is not considered a DMA because it was not 'internal' prior to the exogenous shock, and the amounts available in the spot-market are still small, and mostly imported by governments through state-owned enterprises.

Furthermore, there are issues about scarcity and geographical limitations that make LNG imports mostly EGA. For one thing, the majority of LNG is by long term contracts, and even the smaller amounts in the spot-markets are sold by few countries, but also purchased and imported by few companies (so almost monopolies in the countries in question). Qatar as the single largest supplier with nearly 30% world, with significant investment on infrastructure and vessels, can afford to compete in low price environment in order to keep its market share (Cochrane, 2016). Thus, the import of LNG itself in the face of an exogenous shock is thus justified as an EGA. Indicated in the World Energy Review (IEA, 2016 : 23) ownership of the LNG related infrastructures shows a dominance of the two largest LNG producers (Qatar Petroleum and Shell), accounting for a combined market share of 29%. The top five producers together represent a share of 50% and the top nine producers a share of 68%. However, and by contrast, LNG exporter countries' market share by country (International Gas Union - IGU, 2017 : 9) suggests Qatar alone accounts for almost 30%. Compared to the largest oil producers (another special and strategic energy commodity), data from EIA (Energy Information Administration, 2017), suggests the top 3 produces countries (currently USA, Russia and Saudi Arabia) at a 40% level combined. Qatar deals 90% of the time with long term contracts (IEA, 2016a Global Gas Security Review : 44) and only about 10 % as spot-short term. Therefore LNG supply in general is at the moment and more so when the interviews were conducted, essentially making LNG imports EGA. The IEA report is from 2016, when LNG supply had developed considerably, whereas, when the Russia-Ukraine crisis took place in 2005/2006 Global LNG was not this developed and in Turkey Spot-LNG constituted less than 1% of gas supply according to the EPDK (EPDK/EMRA, 2011: 24).

For the case of Turkey, another exogenous shock, namely the “Situation where Iranian gas was cut in the winter of 2009” (“İran yüzünden kışın doğalgaz sıkıntısı yaşayan Türkiye LNG alımını artırıyor - Ekonomi Haberleri - Radikal,” 17/08/2009) had led Turkey to increase its LNG imports. Though this exogenous shock is not part of the scope of this dissertation, it is an illustration of an EGA response to maintain energy security in the event of a gas crisis.

Going further to the EPDK / EMRA reports, it's noticeable that in 2009 the spot LNG jumped from below 1% levels to 2,18 % and in the following year in 2010 to a record level of 8% (which was never reached again). Since then, spot LNG supply in Turkey constitutes between 2% and 5%. Hence, even with spot-LNG, LNG imports in general constitute an EGA, because the volumes (even today) are relatively small. EPDK further reports (EPDK/EMRA, 2017 "2016 Yılı Doğalgaz Piyasası Sektör Raporu" : 25) that in 2016, even though there are 42 firms licensed for spot LNG, in 2016, only BOTAS and Egegaz have imported spot-LNG, with BOTAS doing most of the import. BOTAS is a state owned corporation, and Egegaz's imports still constitute a very small fraction of Turkey's natural gas imports. The same EPDK natural gas report (EPDK/EMRA, 2017, 2016 Doğalgaz Sektör Raporu : 10-11) indicates that 81% of all natural gas imports to Turkey are realized by BOTAS. This constitutes a nearly-monopolistic market structure. Meaning that for Turkey, such actions were EGA-type responses to exogenous shocks.

By contrast, development of private LNG terminal facilities, especially that of EgeGaz in Aliaga, Izmir (“Egegaz,” n.d.), the more recent FSRU from Etki Liman (floating LNG), or the Lake Tuz natural gas storage of Turkish State-owned company BOTAS are indeed DMA responses to maintain energy security. Because they are private sector investments, and infrastructure within Turkey, and without ‘geographic’ or ‘scarcity’ issues to build those facilities. These domestic investments are enhancing domestic internal capacities, thus balancing through domestic means, and therefore are DMA.

Another important complex example for energy security, assessed in this research, is nuclear energy. Among the case studies, only France can be accepted as a case where nuclear energy is considered a DMA response to maintain energy security, because France has the technology, capital, and means to develop such technology domestically. Akkuyu or Sinop nuclear investments

are not owned by a Turkish state firm like BOTAS. Nuclear investments have a strategic nature and tend to also provide funding (As between KEPCO in UAE). The case of Akkuyu, until recently fully owned by a foreign company, Rosatom, was licensed under a Build Operate Own (BOO) agreement. Thus the operation of the power plant is not under the full control of the Turkish government, but more likely resembling ‘alliance’ formation behavior.

It’s therefore, observable that an investment that is BOO and considered a strategic investment, is not a DMA. As for the reasons why this investment was realized, prestige is an important reason but not necessarily the main or only reason. Other factors; include ‘balancing’ regional actors (for Turkey, because Iran and UAE are both developing nuclear energy), internal diversification among different countries (once again, Turkey is unique in its strategy of diversification among Russian, Japanese and a third possibly Chinese and/or American investment), economic and demographic consideration of growing demand for electricity in a country with growing young population (Akkuyu is anticipated to meet 6 to 7 percent of Turkey’s growing electricity demand (Hurriyet Daily News, 2017). Ownership of the Akkuyu nuclear power project was owned by Rosatom as 100% share holder and under Build-Operate-Own (BOO) basis. Recently, Rosatom sold 49% of its shares in Akkuyu nuclear plant to a consortium of three Turkish private companies, namely Cengiz Kolin Kalyon (CKK) (“CKK, Akkuyu NGS’ye ortak olacak,” 2017; Hurriyet Daily News, 2017). Earlier reports indicate that at least one of the consortium partners was interested in the past (ERDİL & KARANFİL, 2016). Hence, the Akkuyu nuclear plant is not considered DMA, it is considered EGA because it was and still is dominated by Rosatom, which is a Russian state owned company with BOO license.

Also, and by contrast, in addition to the Lake Tuz gas storage investment, another example of a DMA for our purposes is price setting in a domestic institution (such as EPDK/EMRA or EXIST/EPIAS).¹⁹ Price setting, either directly by imposing a price cap (typically set by a regulatory authority) or indirectly by promotion of “efficiency” or imposing additional taxation, is an example of DMA. Either through efficiency or through additional taxation (e.g., on natural gas

¹⁹ Price setting here is used as a general term that includes governments setting prices either through taxation or regulatory mechanisms such as price caps. The intention is not to allude to technical rhetoric of regulatory economics or the rate setting and other pricing mechanisms of regulation.

or LNG), the policy signal is for the markets and consumers to consume less domestically, and therefore for the national economy to import less. The actual price, if not fixed by a governmental institution, is also set in a financial institution like EXIST/EPIAS. While the price set in EXIST/EPIAS is not per se a ‘policy response,’ by contrast the creation of a specialized financial institution like EXIST/EPIAS is an example of DMA, as discussed in Chapter 3.

As discussed with the EXIST/EPIAS market, it’s worth mentioning that three general categories of energy resources were grouped for this research’s purposes. These are hydrocarbons, renewables, and nuclear. Electricity (or Power) is important in energy security, but is itself a product generated from other energy resources. Some of the leading annual reports on world energy, divide the world’s energy resources into three main fossil resources (oil, coal, and natural gas).²⁰ Nuclear energy, which may fall into extractable resource group because of its raw material uranium, is considered separate (as nuclear energy triggers debates on its own security issues). Hydropower is also often separated from other renewables, such as wind, solar photovoltaic, geothermal and biofuels (biomass), because hydropower and biofuels can be stored to a certain degree, while solar photovoltaic (PV) and wind cannot (not yet). Since the exploration, extraction and the technology involved in these resources vary, different types of policy, know-how and engineering are required for all these different energy types.

Regarding how domestic markets may be adversely affected from energy revenues, it is worth remembering the condition known as the “Dutch Disease” (Andersen, 2013; van Wijnbergen, 1984; *The Economist*, 2014). The “Dutch Disease” is described as a condition how the abundant availability of oil and gas revenues may in fact in the long run cause severe socio-economic problems to an industrialized country. Given that the Netherlands is one of the case study countries, there would be references made to this issue in Chapter 5. It’s important not to confuse the “Dutch Disease” with another condition for ‘rentier states’ or countries mostly depending on oil revenues as source of national income, which is the condition known as the ‘oil curse.’ The oil curse is often attributed to how oil rich countries may often have weaker state capacity and that “oil wealth and dependence on it has deleterious effects on social development” (de Soysa, 2015), in

²⁰ Examples: International Energy Agency’s *World Energy Outlook* or the BP *Statistical Review of World Energy*.

contrast with examples suggesting that institutional robustness and efficient state capacity can reduce corruption in oil rich states (Mehlum, Moene, & Torvik, 2006). Netherlands and Norway have not been “victims” of oil curse arguably because of higher qualities of governance and transparency. Governance and transparency promotion have been an important subjects in the literature and in practice in that they make states less vulnerable and more able to attract investment (Oge, n.d., 2011, 2012). The Netherlands in the past suffered from “Dutch Disease” (hence the name) and perceives it as an important factor for energy security and IPE.

Energy markets display considerable complexity, with geopolitics being one of the main reasons for this complexity. As further discussed in the following section, there is a debate as to which one may be of primary importance, geopolitics or the markets.

2.1.5 Debate between the relative weight of Market and Geopolitics on energy security

Energy markets, as discussed in the above section, are complex, heterogeneous, and multi-sectoral, and are highly related to external geopolitical events. The debates between markets and geopolitics are often centered on which one takes priority. For instance, in 1973, OPEC countries used politics to upset the existing global markets (Duval, Le Leuch, Pertuzio, & Weaver, 2009). Therefore, there are still disputes as to which one characterizes the best mode of ensuring energy security.

Others have also tried to get around the problem of prioritization by combining geopolitical and market factors in their theoretical frameworks. One approach understands geographic arrangements as social constructions that are changeable over time (Amineh, 2003 : 2). Amineh & Houweling (2005) use the term critical-geopolitics as opposed to the orthodox or econocentric geopolitics, this time with more emphasis on the role of social constructions and Constructivist theory. In another example, Tekin and Williams (2011 : 32-36) address dynamics of EU, Russia, and Turkey relations in terms of geopolitics and energy security, claiming that it is important for the EU to take both geopolitical and market imperatives into consideration. They also observe that certain member states, such as France, Germany, and Italy, see the geopolitical approach (or negotiated reciprocity with producer states) as a prerequisite for the proper functioning of market

liberalization efforts. Tekin and Williams (2011 : 3-36) also underline the contrasting degrees of vulnerability and sensitivity among the different states of the EU vis-à-vis dependency on Russian gas.²¹ These contrasting degrees of vulnerability would change the responses of different governments in maintaining energy security when faced with exogenous shocks.

Different approaches concur that achieving total energy security is rare. Unlike conventional belief, supplier countries, though, do not suffer from shortage of supply security, but face the challenge of securing revenues through sufficient demand levels. Supplier countries with abundant natural resources need to secure access and continuous trade with consumer markets as they depend on them for revenues (money.cnn.com, 2016). Regarding geopolitics and markets, governments often pursue policies that balance both in order to ensure energy security, consistent with the “Term Structure” approaches in the short term and long term (for definitions, see footnote 2).

Intuitively this distinction between operable timeframes rests on the logic that the parameters within which market forces exert their desired influence are ultimately set by geopolitical action. Although economic crises such as the 2008 crisis are market conditions that threaten energy security, ultimately markets need security to function and operate. Any threat to the safe and secure functioning of markets, such as piracy off the coast of Somalia (Djama, 2011), raise the costs of transaction (e.g., via insurance premiums and additional security expenses) for market actors. Therefore, since political decisions informed by geopolitics have more systemic level impact on energy policies, due to constraints causing vulnerabilities, government face challenges when responding to exogenous shocks, in order to maintain their energy security. Thus, major policies cannot shift overnight, according to short term market fluctuations. A very intuitive way of understanding this point is to think of security as a pre-condition for free markets to work.

Within IR scholarship, this debate between markets and geopolitics can thus be incorporated into the larger debate between the Realist and Liberal paradigms, adapted to incorporate the specific physical features of particular energy resources. In particular, Neoclassical Realism serves as an

²¹ Tekin and Williams (2011) refer to the complex interdependency of Robert O. Keohane and Joseph S. Nye, *Power and Interdependence* (London: Longman, Third Edition, 2001).

apt theoretical basis for advancing the geopolitical side of the energy security debate. Conversely, Liberal Theory gives more credence to the pro-market side of this debate both for International Relations and for International Political Economy. However, exogenous shocks pose challenges on maintaining energy security and brings attention to geopolitics once again. For example, In the Russia-Ukraine natural gas crisis that began in 2005-2006, geopolitics were once again recognized as having more weight than markets by many governments (Umbach, 2010).

Technologies are another significant factor with system-level effects (Buzan & Hansen, 2009; Deudney & Ikenberry, 2009). They also change the parameters government need to consider for maintaining energy security (such as cybersecurity and network security). Energy and the Internet are seen in the new economy as keys to changing current energy systems (Friedman, 2008 : 217). Technologies allow countries to formulate strategies aimed at reducing economic dependence on imported raw materials, thus becoming less vulnerable to exogenous shocks beyond their control. According to Keohane and Nye (2001 : 208):

If one were concerned about other countries' refusals (or inability due to declining reserves) to sell energy or materials, one could restrict total imports, diversify sources of supply, build up stockpiles, and design contingency plans for rationing supplies in the event of sudden deprivation. Over the longer run, the United States could invest in technologies to produce new sources and substitutes. Given time, technology can change the seemingly inexorable dependence supposedly implied by figures about known reserves.

The overall significance of material capabilities and economic vulnerabilities in both the Liberal and Neoclassical Realist traditions suggests they are not necessarily incompatible approaches to understanding how to maintain energy security. Furthermore, both paradigms offer explanations of how the development and utilization of alternative energy sources (both renewables and nuclear) can reduce dependency on hydrocarbon imports or decrease the vulnerability entailed in high levels of dependency on these resources. Nonetheless, the way national agendas favor one approach over the other distinguishes the two theoretical approaches in the arena of energy security. As rhetoric and policy focused on developing "domestic" capabilities to ensure energy security, as opposed to the "laissez faire" approach of promoting access to standardized

commodities in the global market, appear to dominate most agendas, geopolitics also appears to demarcate the framework within which markets can operate.

A very prominent example for this dissertation concerns the so called “hedging” across liberal and realist paradigms regarding the optimal relationship between markets and geopolitics. An important contributor to the Markets or Geopolitics debate has been Escribano Francés (Escribano Francés, 2011), who makes a very comprehensive analysis between markets and geopolitics vis-à-vis the Europeanization of energy security, providing a political economic perspective focused on “governments’ preferences in the process of hedging across neo-liberal or neo-realist scenarios” and arguing that the EU has “normative” power and therefore is more likely to prefer the institutionalization and mechanisms of markets under EU norms. The analysis provides an excellent illustration of the role of markets and geopolitics in energy security. The approach in this dissertation, however, presents a more detailed conceptual understanding through internal or external balancing.

The Term Structure Approach will endeavor to explain how time horizons and the concepts of internal and external balancing could be used to reduce sensitivities and vulnerabilities. While both factors influence policy decisions, they exert influence over the respective spans of different time horizons. For instance, the development of alternatives such as renewables and nuclear energy is a type of internal balancing with ramifications for the distribution of power at the international level as well. That is, political decisions on energy such as an intergovernmental decision to build a pipeline (like TANAP–TAP or its predecessor BTC) are political factors that can modify the relevant structure of the international system.²² Essentially inspired and informed by internal and external modes of balancing, respectively, DMA and EGA are policy responses to exogenous shocks in the long term. The assumption is that in the long term, governments design their foreign policies to reduce vulnerabilities and enhance/augment energy security.

2.2 A novel approach to energy security: Term Structure Approach

²² The Arab or OAPEC embargo decision is another political decision that altered the market balance.

This research offers a new approach that aims to reconcile both Liberal Complex Interdependency and Realist paradigms through the analytical use of analogies to internal and external balancing. This new approach is used to account for how governments respond to exogenous shocks in the area of energy security. According to this approach, governments are observed to be making internal and external “balances” as well as long term and short term policy decisions in order to maintain energy security. According to this approach, governments develop two distinct decision timeframes or time horizons aimed at maintaining energy security.

Governments use different strategies in different term structures for responding to exogenous shocks to their energy security. Governments are more likely to make short term decisions when their preferences and choices are structured by cyclical market conditions. In making medium to long term decisions, however, they are largely affected by more structural/systemic geopolitical factors. Governments try to balance against vulnerabilities in order to eliminate or minimize their weaknesses (as in SWOT matrices in each case). Different political (geopolitical) and economic (market) events have long term and short term effects, so the time factor is indispensable to consider.

The Term Structure Approach could be summarized as follows:

Economic sensitivity is more easily observable in the short term. Political Economic vulnerability stemming from geopolitical vulnerability becomes more evident and can be better addressed in the long term. Furthermore, Politics in general and geopolitics in particular set the structural framework within which the markets operate, and as such they set the “term structure” for the markets.

Geopolitics, due to its implied large scale and long term nature, infuses a strategic context to foreign policy that the market, governed as it is by short to medium term profit/loss cycles, is unlikely to provide. Major investments such as TANAP (or its predecessor BTC), and Akkuyu nuclear plant were initiated by means of intergovernmental agreements. Intergovernmental agreements are significant for investments such as oil & gas pipelines and nuclear power plants such as the recently ratified agreement on civilian nuclear cooperation between Turkey and China

signed in 2012 but ratified in September 2016 (Munyar, 2016). An important issue is that the key resources of these investments were all external (including the fuel for the nuclear plant). Hence Governments of Turkey balance structurally in order to maintain energy security through some alliance-like EGA. If these resources are internally available (such as France and nuclear energy), only then could they be considered DMA.

Market-related events are observable in a couple of years, often associated with factors such as the current fall in oil prices. A key factor in the contemporary downward fluctuation of oil prices according to some financial analysts is the global economic crisis that lowered energy demand by countries such as China, the world's second biggest oil consumer, causing global crude oil prices to sink (Puko & Kantchev, 2016). There was a similar decline in prices after the Asian financial crisis (AFC) in 1997, leading to the Russian Ruble devaluation in 1998. According to Sachs (2001), who made an analysis in 1998 in the immediate aftermath of the AFC, short term and long term differences in policy decisions regarding financial markets are stressed. According to them;

A push toward further liberalization of long term capital flows, including foreign direct investment, has little risk and probably significant long term economic benefit. The problems arise mainly from the lack of any distinction between short term and long term capital flows. While the liberalization of short term capital movements should be undertaken only gradually and with extreme caution, opening the financial sector to foreign direct investment should probably be much more rapid and forthright.

Therefore, policy in energy security, as in financial markets, is also likely to incorporate the different time horizons between short term and long term effects of important events on policy. DMA are often in responses to such events. By contrast, geopolitics, such as the crisis between the Ukraine and Russia, had a much longer time horizon, and more associated with certain vulnerabilities in energy security by having interruptions of supply. For the case of the Ukraine, Ukraine was an energy transit country that turned out to be politically and economically more vulnerable than thought. Geopolitics may be more associated with long term time factors and vulnerable situations.

Economic decisions are results of reflexive reaction to developments in the global economy. They are often in the form of market liberalizations or providing economic subsidies (feed-in tariffs). Market liberalizations are actions such as to privatization of state owned enterprises, or unbundling of vertically integrated companies. The next three chapters below will provide an analysis based on this new term structure approach to understand how the governments of Turkey (the main case), France, and the Netherlands responded to the 4 exogenous shocks.



CHAPTER 3

RESPONSES OF TURKISH GOVERNMENTS TO EXOGENOUS SHOCKS

3.1 Background on energy security in Turkey

The main case study country, Turkey, is the most populated country among the three case study countries (as indicated in Figure3). Turkey's population of around 79 million is more than any EU country except for Germany (80.6 million) and does not include 3 million refugees (European Commission, 2016). Compared to France and Netherlands, Turkey is almost as populous as the other two combined (World Bank, 2015).

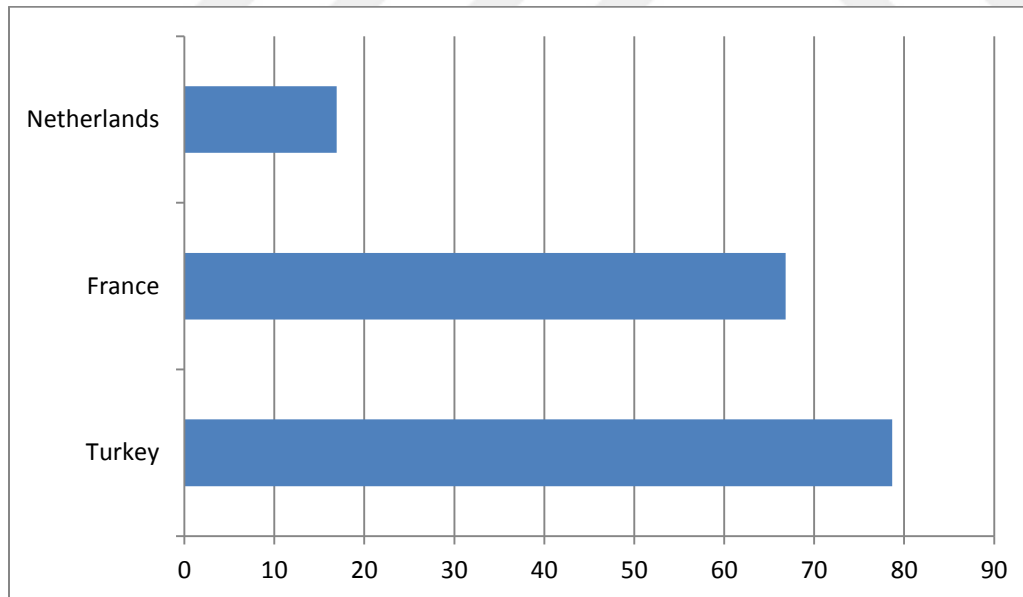


Figure 3. World Bank Data for Total Population of France, Turkey, and Netherlands (World Bank Data, <http://data.worldbank.org/indicator/SP.POP.TOTL?locations=NL-TR-FR> Access date: 23 August 2016)

Also, it is the only one among the selected case study countries that is not a member of the European Union; although Turkey is a member of NATO, OECD, G20 and the Council of Europe (Rep. of Turkey Ministry of Foreign Affairs, International Organisations, 2017 Access 24 April 2017). Turkey borders Middle Eastern countries like Syria, Iraq and Iran and thus zones of conflict and instability. Since the Cold War, Turkey's constantly changing neighborhoods have presented a major policy challenge for successive governments. However the outcome of the interviews does not necessarily suggest such an inclination. This is likely due to Turkey's steady economic growth over a decade since the 2001 financial crises, and the 2008 World Economic Crisis effects on the Turkish economy were not as grave as the previous crises (Ozatay, 2009 : 154). However, although an OECD country, Turkey's GDP per capita ranks considerably behind France and the Netherlands (as indicated in Figure 4) (World Bank, 2015).

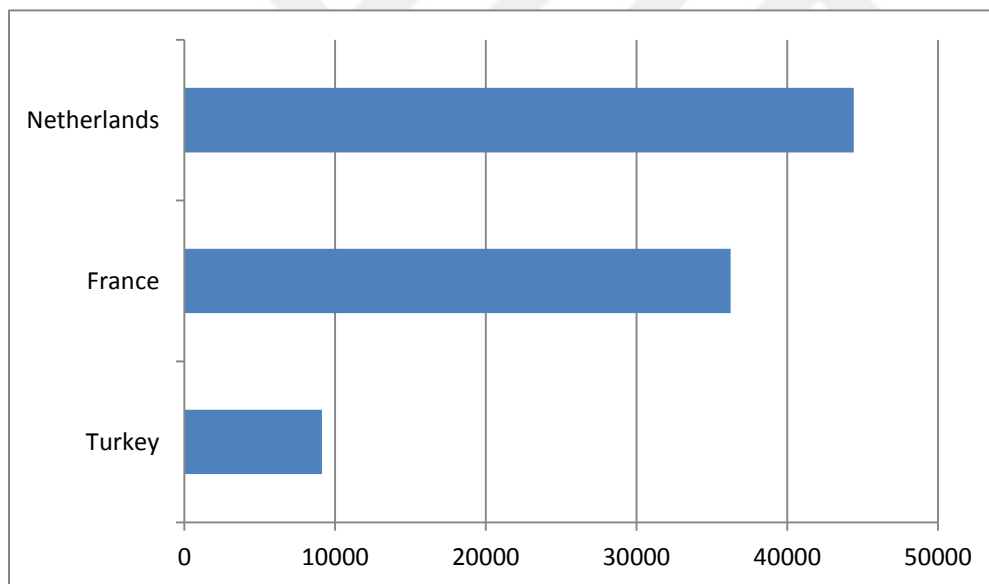


Figure 4. GDP per Capita (Current \$ U.S., 2015) (WorldBank, Data, <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=TR-FR-NL> Access date: 23 August 2016)

Turkey's energy resources are relatively poor in terms of fossil fuels and hydrocarbons, but not for renewable energy. According to the International Energy Agency (IEA, 2016), Turkey consumed "129.7 million tons of oil-equivalent (MTOE) in 2015, representing an increase of 54% from 84.2 MTOE in 2005 [...] Turkey is highly dependent on oil and gas imports as only 24.8% of energy supply is met by domestic production" (IEA,2016). Turkey imports an

overwhelming majority of its petroleum and natural gas, on the majority (55.3%) from Russia and most of the rest from Iran and Azerbaijan except for some LNG imports from countries like Nigeria and Algeria. Turkey also has domestic hydroelectricity and other renewable resources (BP, 2016). Still, the latter are not sufficient to cover the needs of its growing industry and population, which makes Turkey vulnerable to supply shortages.

Turkey's vulnerability has been a concern expressed in the national energy and mining policy announced in April 2017. In fact, the national energy policy that was presented by Minister of Energy and Natural Resources Berat Albayrak in April 2017 clearly prioritized the use of domestic resources and developing infrastructural capabilities (such as natural gas storage) with the aim of achieving greater energy security (*Haber Turk*, 2017). This new policy involves a combination of long term EGA and DMA to reduce vulnerabilities and maintain energy security. The recently announced policy calls for development of local sources, renewables, developing a domestic financial market, and building new infrastructure, especially for storing natural gas.

Furthermore, because most of the natural gas is supplied through pipelines, which operate via long term purchase guarantees called take-or-pay (sometimes also called "use or pay") contracts, Turkey also pays relatively higher fees for natural gas. Intergovernmental agreements like the 10-page agreement between Turkey and Azerbaijan for TANAP (TANAP Intergovernmental Agreement, 2012), are generally much simpler than the actual technical agreements and clauses. For instance, Turkey had to pay billions of dollars due to invocation of take-or-pay clauses in the long term natural gas agreement with countries supplying the bulk of its natural gas (Rzayeva, 2014: 22). Take-or-pay agreements were eventually amicably renegotiated between Turkey and Russia (*Hurriyet Daily News*, 2013), but had to be judged in the International Court of Arbitrations (ICA) in the case that arose between Turkey and Iran. Recent ICA ruling on the dispute between Turkey and Iran decided that Iran had to pay \$1.9 billion to Turkey (*Hurriyet Daily News*, 2017). Thus, long term agreements often involve take-or-pay clauses as major sources of dispute. Between Turkey and Iran, the dispute arose over Turkey's claims of Iran's overpricing.

Table 3 and Table 4 below provide some background on the production and consumption of primary energy in Turkey, in million tons of oil equivalent (MTOE) (Energy Information Administration, 2016). Both tables illustrate the general energy dependency of Turkey, for instance in 2014, while only 27.7 MTOE of energy was produced, 130.7 MTOE of energy was consumed.

Table 3. General production and consumption of primary energy in Turkey (Energy Information Administration, 2016)

Year	Production (MTOE)	Consumption (MTOE)
2003	23.1	83.4
2005	26.9	94.0
2010	34.1	113.1
2013	31.1	130.2
2014	27.7	130.7

Table 4. Production and consumption of primary energy in Turkey per resource type
((“International Energy Statistics - EIA,” n.d.)) (Energy Information Administration, 2016)

	year	Oil	Coal	Gas	Nuke	Hydro&	Renewables
PRODUCTION (MTOE)	2003	2.5	11.1	0.5		8.9	0.1
	2005	2.4	13.7	0.8		9.9	0.1
	2010	2.6	17.1	0.6		12.6	0.9
	2013	2.5	11.5	0.5		14.1	2.2
	2014	2.6	12.0	0.4		9.7	2.9

Table 4 (cont'd)

CONSUMPTION (MTOE)	2003	33.0	21.6	19.7	8.9	0.1
	2005	33.4	25.5	25.3	9.9	0.1
	2010	32.8	31.9	34.9	12.6	0.9
	2013	80.5	32.2	42.1	14.1	2.2
	2014	38.9	34.1	44.7	9.7	2.9

That is why the diversification of sources by projects with Azerbaijan such as TANAP is a priority to maintain energy security. Through these projects, successive Turkish governments aim to make Turkey an energy hub, not simply a transit country. However, storage capacity needs to be developed in greater volume in order to achieve that aim.

Turkey is an important crossroads of energy between major producer states (Middle East and Caspian region) and countries in the European Union. The Turkish straits are also very important strategic maritime narrow passages (choke points) and the only channel of maritime access for the littoral states of the Black Sea. Therefore, active energy diplomacy is a top issue for Turkey's Foreign and Energy ministries. Turkey's position gives it the potential to act as a hub once adequate storage and port facilities (LNG terminals etc.) are developed. The Ministry of Foreign Affairs (Rep. of Turkey, Ministry of Foreign Affairs. (n.d.), *Turkey's energy profile and strategy*., retrieved from <http://www.mfa.gov.tr/turkeys-energy-strategy.en.mfa> on April 25, 2017) states that Turkey should first increase its own energy security by having a diversified energy mix:

To realize its own energy security, Turkey aims to i) diversify its energy supply routes and source countries, ii) increase the share of renewables and include the nuclear in its energy mix, iii) take significant steps to increase energy efficiency, iv) contribute to Europe's energy security.

Interestingly, as of April 2017, the Turkish Ministry of Foreign Affairs' website still lists the contribution to Europe's energy security as well as achieving EU standards among the pillars of its own energy security. Perhaps this is because the same document then states as a vision that Turkey would become an "energy hub." The implicit intention is to become both a 'physical hub' as well as a 'trade center.' Accordingly, "The goals of strengthening its position between East-West and South-North Energy Corridors and becoming an energy trade hub is thus duly reflected in its energy strategy" (Rep. of Turkey Ministry of Foreign Affairs (n.d.), 2017, retrieved from <http://www.mfa.gov.tr/turkeys-energy-strategy.en.mfa> on 24 April 2017). The role of hub is justified on the basis of "regional security." In the short to medium term, the concept of developing domestic infrastructures, as well as domestic financial institutions, in order to become an energy hub is in line with DMA. In the long run, however, as part of the complex nature of many energy infrastructure projects, the motivation can be described as EGA. By building new projects (pipelines), Turkey would then create the "framework" wherein markets (in this created energy hub in Turkey) would allow the country to operate on a daily basis as an economic hub. Infrastructure is important for becoming a financial/economic hub, but strong financial institutions backed by strong overall institutional and regulatory capacity are even more essential.

For Turkey's integration into the European electricity market, adopting the ENTSO-E criteria was necessary. Extension of Europe's continental synchronous grid to Turkey came into effect on April 2015. According to Pierre Bornard, ENTSO-E Chairman and Deputy CEO of RTE, the French transmission system operator, "Electricity interconnection brings social welfare. This agreement means more electricity trade, more sharing of power reserves, more security and mutual help in emergency situations" (ENTSO-E, 2015).

In certain contexts, energy transmission organizations or regional transmission organizations act as a medium for the exchanges in the electricity market. A famous example is PJM ("PJM - About PJM," n.d., retrieved from <http://www.pjm.com/about-pjm.aspx> on 28 March 2017) in the US with its different types of same day and day-ahead markets. Turkey lacks a Regional Transmission Organization (RTO) on the model of the PJM interconnection. By contrast, there does exist the Energy Exchange Istanbul – EXIST/EPIAS –and a derivatives market, the VIOP.

The significance of interconnection to social welfare, security, and mutual help in emergency situations is an indication of the strategic role of interdependence. In the Turkish context, the role of the transmission grid and consequently of the energy regulatory agency (EPDK/EMRA) becomes important at a regional/international level for ‘coordination’ amongst markets. This role is still mostly under the ministries of Energy and Foreign Affairs. Thus, the government is the driving force behind energy security. For instance, it is actively developing nuclear power plants and began construction undeterred after the Fukushima fallout. The first planned nuclear plant is the Akkuyu project with Russian company Rosatom. One has to bear in mind that there have been changes in the pipelines project over the last few years. At the time of the interviews, the next most likely project after BTC was to be Nabucco, which did not come to fruition. TANAP, which will transport gas from Azerbaijan to Europe, took its place instead and has already started survey and initial construction works. Also, at the time of the interviews, there was concern for potential Russian dominance of the market even though the relations between the Russian and Turkish governments were relatively good. Today, relations are recovering quickly after a nearly one-year period of great tension between the two countries.

Turkey wields more independence and has sovereign inclinations on matters of energy security and geopolitics. Like Turkey’s Blue Stream with Russia, Germany also made an independent North Stream project directly with Russia, literally bypassing much of Eastern Europe in the process (Lochner & Bothe, 2007). France also pursues a sovereign national policy on geopolitics, including its own strategic reserves of oil and gas as well as its predominantly nuclear-powered electricity market. The Netherlands, historically a trading nation, pursues a policy based on promoting Rotterdam Europort as the main energy hub in Europe. The Netherlands also allows an investor-friendly environment for multinationals such as the Anglo-Dutch giant Royal Dutch Shell.

Turkey, unlike France and the Netherlands, does not have a powerful MNEC like Royal Dutch Shell, nor does it possess a NEC or ‘national champion’ similar to Total. In the absence of such a global company, the Turkish Government promotes major projects based on conglomerate participation or intergovernmental agreements.

In recent years, there has indeed been a “balancing of energy security” through both internal and external means in Turkey. On one hand, major infrastructural projects were completed and are being developed. The BTC project, which was initiated by an intergovernmental agreement in 1999 (TBMM, 2000), became operational in 2006 (BP Caspian, n.d.), and the TANAP as well as the Akkuyu projects are ongoing. On the other hand, at the domestic level, Turkey provided generous feed-in tariffs to encourage renewable investments (both from within Turkey and via foreign direct investment) and a new energy futures market has been created.

The creation of a new energy market, the Energy Exchange Istanbul (EXIST) but more commonly known by its Turkish acronym EPIAS (for *Enerji Piyasaları İşletme Anonim Şirketi* (EPIAŞ)), has been an important development that is considered as a policy response. As discussed later, this was a critical milestone for the aspiration to become a regional energy finance center and hub by Turkish officials. This aspiration is apparent in the Turkish Ministry of Foreign Affairs’ official documents (Turkish Ministry of Foreign Affairs, 2017) and reconfirmed in the April 2017 national energy document of the Ministry of Energy (Turkish Ministry of Energy, 2017). The law that allowed EPIAS to be created formally on 18 March 2015 is in fact based on Law 6446 of 14 March 2013 on the electricity market. Hence, it has been created after all four of the exogenous shocks had occurred. Because of its 2013 legal background, the market itself, which was created in 2015, is still in its infancy, but is a critical example of long term DMA. Though long term, its creation accords with the third major objective of Turkey to become a major energy hub and in the process develop a strong energy financial market, as was stated recently by both relevant ministries (Turkish Ministry of Energy, 2017, accessed 13 April 2017; Rep. of Turkey Ministry of Foreign Affairs, 2017, accessed 13 April 2017). This objective is no secret as, unlike in the English version of the webpages, each of which are one paragraph (EPIAŞ, n.d., accessed 13 April 2017), there are literally only two lines in the Turkish version of the mission and vision statements of EPIAS (EPIAŞ, (n.d.), retrieved from <https://www.epias.com.tr/kurumsal/misyon-vizyon> on 13 April 2017):

Mission - Manage energy markets in an effective, transparent, and reliable manner

Vision - Contribute to Turkey becoming a regional energy trade center

This policy action to strengthen the energy exchange market, which could be classified as a DMA in the long term, has clearly been taken in order to maintain continued energy security both in terms of access to sources and to have a say in formulating prices. It remains to be seen whether Turkey can develop into a prominent regional market.

In attempts to maintain energy security for Turkey, a key feature has been the attempt to diversify (both through the TANAP and now KRG-linked pipelines and via the development of renewables and nuclear), all of which require a “political” decision for economics to operate in the markets. Even the creation of an energy financial market was a political decision, as was the delay in unbundling BOTAS. Since its inception, the regulatory agency has become more robust in regulating the energy market. Hence, using the “term structure approach” to understand how successive Turkish governments have tried to maintain energy security, their reactions to the 4 exogenous shocks will be assessed below. The main weaknesses and threats to Turkey’s energy security are assessed Table 5. The measures envisaged by policy makers to reduce vulnerabilities will also be discussed in the below sections.

Table 5. SWOT analysis matrix (source: Original created by the author)

Energy security SWOT analysis	
TURKEY	
STRENGTHS	WEAKNESSES
● Experience with past and ongoing major Energy projects (BTC, TANAP, Russian Gas, Akkuyu Nuclear). ● Access to a diverse regional hinterland covering North Africa, Europe, Middle East, Russia and Central Asia. ● Emerging Market with diversified industrial and economic portfolio: Domestic Market capacity in addition to being a transit country	● Limited reserves of conventional and fossil energy resources. ● Inadequate Storage Capacity ● Underdeveloped Institutional and Regulatory capacity ● Energy financial market still in infancy

Table 5 (cont'd)

OPPORTUNITIES	THREATS
● Energy Diplomatic Mediator: Use political relations to negotiate and make possible geopolitically challenging projects ● Physical Hub: Location at crossroads between producers and consumer countries ● Economic Hub: Develop the financial markets to include greater portfolio of energy derivatives ● Potential to develop renewable energies even more	● Region: Located between zones of chronic political instability and insecurity (Middle East, Caucasus, Balkans, Black Sea, and Eastern Mediterranean) ● Overdependence on a limited number of countries for natural gas and nuclear energy (Russia for both nuclear and gas, Iran and Azerbaijan for natural gas). ● Uncertainty with the EU accession process and thus about which institutional and regulatory regimes to adapt

Coincidentally, less than a year after the above table was been created, Turkey's National Energy and Mining Policy was presented at a presentation program open to the press and inviting many chief executives of energy investing major companies in Turkey. The three main pillars of the "National Energy and Mining Policy" have been described as consisting of 'supply security', 'localization' (strengthening domestic capacity), and 'foreseeable market' (market stability) (Kara, 2017). Interestingly, the first two pillars coincide with the EGA and DMA respectively. The third is similar to what has been described in this research as long term DMA. Interestingly, this is also similar to the energy 'trilemma' where Markets and Geopolitics constitute roughly 2 of the 3 edges of the Energy Trilemma of the World Energy Council (World Energy Council & Oliver Wyman, 2016), though increasingly in recent years the environment has begun to emerge as a 3rd dimension (ex: WEC's Trilemma). Unlike the 'trilemma' presented in the World Energy Council 2016 in Istanbul, Turkey's "National Energy and Mining Policy" does not include the environment as a third pillar, but instead includes the development of domestic market capacity (what is considered long term DMA in this research) as its third pillar. This research did not include environment for the purposes of simplification and for narrowing the scope of the research. Either way, apart from the environment, the "Term Structure Approach" presented in this research,

the “Energy Trilemma” of the WEC, and the three pillars of the “National Energy and Mining Policy” of Turkey all focus on the markets and geopolitics aspects of Energy Security. Hence, the above SWOT analysis is for Turkey, and similar SWOT analyses are done for the other case countries analyses. These SWOT matrices allow a uniform comparison to demonstrated vulnerabilities and weaknesses of the case study countries’ energy security.

Thus, the overall strengths of Turkey in terms of energy security could be listed as major energy grand projects, access to a diverse hinterland, and considerable domestic market capacity of its own. Turkey has experience with major international investments such as BTC in the past, but also with ongoing major projects such as TANAP and Akkuyu nuclear. This potentially builds Turkey’s capacity, experience and know-how in realizing grand projects and major infrastructure capacity building. With a population of nearly 80 million, and a growing economy, Turkey’s domestic market is in itself sufficiently large and in needs of continuous energy investments. For example, it has been estimated by the Ministry of Energy that Turkey would need to make over 8 billion dollars of investments until 2020 in the area of electricity generation alone (Kara, 2017). This means Turkey, in addition to being an important energy transit state, is also a major energy consumer state albeit not necessarily more energy-secure. Even though its large population renders it an important market, growing demand applies more pressure on maintaining energy security. However being a transit state with a sizable market may create certain opportunities attributed to the economies of scale in realizing grand-projects. Notably, being a large market makes Turkey an attractive partner for energy transit as a considerable proportion of the transited energy could be also used within the Turkish domestic market. A recent example is the Southern Gas Corridor, which will transport 16 bcm of natural gas; 6 bcm has been allocated to the Turkish domestic market via TANAP and the remaining 10 bcm is carried into Europe through the Trans Adriatic Pipeline (BP, *BP is now a shareholder in TANAP*. Retrieved from http://www.bp.com/en_az/caspian/press/features/BP-shareholder-of-TANAP.html on 27 April 2015).

Finally, Turkey’s geographic position is literally unique, and this would allow Turkey to have a major role as the location where energy is distributed and also traded. The final pillar listed in Turkey’s national energy policy (April 2017) has been identified as contributing to Turkey’s role

as a regional energy hub, and particularly to developing as an energy trade center (in terms of both the energy financial markets and of the actual physical supply of energy resources). Turkey is located not only between east and west, but also north and south, and has a diverse regional hinterland including North Africa, Europe, Middle East, Russia and Central Asia. This means that its location lies between consumers and producers, but also between developed and developing countries.

These relative strong aspects of Turkey's energy security will create certain potential opportunities. Turkey is perhaps best placed to use its special location vis-à-vis its diverse hinterland to engage in energy diplomacy and act as a mediator country in facilitating win-win energy related deals in the region. Turkey may use its political relations to negotiate and make possible certain geopolitically challenging projects in the region. Secondly, Turkey's location as a crossroads between producer and consumer states truly creates an opportunity to become an energy hub both in the sense of physical transit of resources, but also as an economic trade and finance center for energy resources, products and services. Finally, Turkey's own domestic resources, though limited in terms of conventional fossil fuels such as oil and gas, contain rich renewable resources and other raw materials. For instance, solar energy is relatively unexplored and the Turkish Ministry of Energy is keen to develop it further as observed in the recent tender in the Konya Karapınar area (Bloomberg HT, 2017). In fact, the tender includes conditions to develop technology, local manufacturing and employment that aim to further develop Turkish know-how and production in the arena of new renewable energy technologies such as solar energy. However, in spite of relative strengths and potential opportunities, there are certain considerable weaknesses and threats to Turkey's energy security. The section below would further discuss the conditions for Turkey to become an economic / financial hub.

3.2 Energy market conditions in Turkey and aspirations to become an economic/financial hub

In recent years and increasingly more since the creation of EPIAS/EXIST, the energy exchange market of Istanbul, Turkish policy-makers have worked to turn Turkey into a financial/economic hub as well as a physical hub. This represents a policy to reduce long term geopolitical and market

vulnerabilities by allowing Turkey to become a center for regional energy markets as well as energy allocation between consumer and producer states. However, it is important question to ask whether these conditions exist in Turkey. In that respect, one has to take into account both institutional and the storage capacities.

The major threats and therefore vulnerabilities in Turkey's energy security are serious regional conflicts and instabilities in its direct neighborhood (primarily Syria and Iraq). Turkey, furthermore, is not an EU member, and has since the end of the Cold War been surrounded by zones of conflict and instability (such as the Middle East, Caucasus, Balkans, Black Sea, and Eastern Mediterranean), which have also affected Turkey by deterring risk-averse investors. The regional crises have created serious risks for Turkey's energy security because of Turkey's overdependence on a limited number of regional countries (namely, Russia, Iran and Azerbaijan) for energy resources such as natural gas.

While some of these are internal, others relate to external factors. Whatever the cause of insecurity, Turkey's energy policy attempts to reduce vulnerabilities by making the necessary long term adjustments. For example, Turkey has limited conventional and fossil energy resources (little petroleum or natural gas) and insufficient storage capacity for these resources, as reflected in the aspiration to make the compensating investments specified by the "national energy and mining policy" of April 2017. The same presentation declared that Turkey would like to make investments such as developing its LNG terminals and the capacity to store 20% of its natural gas consumption and 5 million tons of crude oil (Kara, 2017). To become an energy trade center, Turkey needs to develop greater institutional and regulatory capacities, and its current energy financial market is at its infancy.

EPIAS was only created in 2015 and has yet to establish itself as a considerable regional energy financial market. The purpose for its creation ("Mission and Vision | EPIAŞ," n.d., Access 13 April 2017) is to turn Turkey into a major energy hub and trade center, as stated by the ministries of Energy and Foreign Affairs official documents and statements (Turkish Ministry of Energy, 2017, accessed 13 April 2017) (Turkish Ministry of Foreign Affairs, 2017, accessed 13 April 2017). The aspiration to become an important regional energy trade and finance center is not always

something that is proportional to the size of the country's population and physical capacity. That being said, sufficient size of the economy, population, and physical and institutional capacities are advantages. However, as seen with the Bahrain example, it's not a precondition. Although a relatively small island nation, Bahrain's \$58 billion US of sharia-compliant Islamic finance assets make it one of the most important centers of 'Islamic' finance in the Gulf region and in the World (OIC Outlook Series, 2012 : 6). This contributes to Bahrain playing an important role in global energy financial markets and the 'transaction' of energy and energy derivatives despite being the smallest GCC State and having limited storage and export capacity of oil and gas. It is important to note that Bahrain's relatively investor-friendly policies contribute to being perceived as an attractive trade and finance center (hydrant.co.uk, 2015, access 25 April 2017). One can also give the example of Singapore, which is ranked second in the World Bank's ranking on the ease of doing business (World Bank, "Ease of doing business index", 2017) as a financial and trade center in Southeast Asia, even though it's surrounded by larger and also successful neighboring Malaysia and Indonesia. Turkey is ranked at number 69 in the same ranking on the ease of doing business.

In addition to being a large market, Turkey needs to showcase itself as an attractive destination for FDI and portfolio investments. Transparency and good governance are in practice making States less vulnerable by making that State able to attract investment (Oge, 2011, 2012). In addition to security and economic stability, investor friendly environment are key in becoming an energy hub. Time will reveal if EPIAS and the Turkey's Sovereign Wealth Fund (Reuters, 2017, access 25 April 2017) would be able to make a breakthrough and contribute to Turkey becoming a regional energy finance market.

3.3 Responses to exogenous shock: 2003 invasion of Iraq

3.3.1 Crisis background

Turkish public opinion was fiercely opposed to the 2003 invasion of Iraq by the US led coalition, which caused serious political tensions between Turkey and the United States. One of the

consequences of that event in the long run was an unlikely rapprochement between the Turkish government and the Kurdish Regional Government in Northern Iraq.

NATO allies since early 1952, United States and Turkey have been strategic partners throughout the Cold War and up until today, even though the partnership has had its ups and downs. An episode of the “downs” consisted of the events subsequent to the invasion of Iraq by US and its allies in 2003. On March 1, 2003, the Turkish Parliament rejected (technically it lacked a sizable enough majority to approve) the motion allowing US troops to launch an invasion of Iraq from Turkish territory. Like the majority of the public opinion in Western countries, Turkish people were against the war. The Turkish government was unable or unwilling to convince public that cooperation with US was in the interest of Turkey (Council on Foreign Relations, 2003).

Like most NATO members, Turkey’s positive reaction to the US after 9/11 terrorist attacks were followed by concrete support in the form of sending troops to Afghanistan. However, with the occupation of Iraq in 2003, Turkish public opinion was fiercely opposed to the war. The war itself did not last long and Turkish fears of another refugee crisis did not materialize until the crisis in Syria that started in 2011. Turkish warnings to the US about post-war chaos in Iraq proved to be correct (in terms of the ongoing ISIS threat). Tensions between Turkey and US over Iraq marked one of the low points in bilateral relations. Furthermore, the notion that US had invaded Iraq for its oil became entrenched in the minds of the millions.

Public opinion in Turkey, as in Europe, was not persuaded by arguments that the US was bringing democracy and eliminating the dangers of WMD. What seems to have made the Turkish opinion more hostile than others to the “unjustified adventure” in Iraq was the general view that Turkey after the first Gulf War had borne the burden of the ensuing economic and political costs of UN sanctions, including unemployment as well as the economic and refugee crises, followed by a surge in terrorism. Politically, Turkey didn’t feel an immediate need to replace a weak Saddam. Also Turkish interests emphasized the territorial integrity of Iraq. A disintegrated Iraq would allow Shia majority to rule Iraq and develop closer links with Iran, and worse, would enable Iraqi Kurds to develop the autonomy as they have enjoyed since then (Brewin, 2004 : 93–100).

Because of the Turkish rejection, the US had to work more closely with Iraqi Kurds.²³ While there were initial tensions between successive Turkish Governments with the Kurdish Regional Government (KRG) in the post-Saddam era, relations eventually improved, and in fact became very close and to a certain degree almost amicable in the field of energy and investments, as well as trade and construction.

The relative stability of the region under Iraqi Kurds compared to the rest of Iraq, and the proximity of the Iraqi-Kurd Region to Turkey, led to the development of economic cooperation between a State actor (Turkey) and a sub-State actor (KRG) (Özdemir & Raszewski, 2016). In fact, the majority of Turkey's economic cooperation with Iraq is through Northern Iraq. "By 2012, 70 percent of all trade and investment between the two countries [... Turkey & Iraq...] was concentrated in [Iraqi Kurdistan Region], even though its population represents only one-sixth of Iraq's total" (Ottaway & Ottaway, 2014). Furthermore, the relationship is stronger than a 'marriage of convenience' or a temporary or a relationship prone to be confrontational again. Although there was in the past opposition of Ankara to greater autonomy of the KRG in Northern Iraq, current conditions foreseeable over the next two decades would likely increase the level of economic cooperation:

It is difficult to envision a scenario that is both likely and able to derail the ties that have developed between Turkey and Iraqi Kurd region. There simply exist too many imperatives pushing them together: economics, *realpolitik* and geography (Romano, 2015 : 100).

Key projects, such as the development of the Taq-Taq oil field since 2006 by Genel Enerji (General Energy)(General Energy, Taq Taq, 2016, access 26 April 2017), a Turkish company, is an evidence of the long term commitment to economic cooperation between Turkey and KRG. Thus, assets such as the Taq Taq field, which has estimated 647 million billion barrels (bbl) of oil reserves, held by a Turkish company, could be a reason for anticipating that Turkey's

²³ Kurdish leadership was corrupt, abused power, and showered US officials with expensive gifts, leading to a US government corruption investigation on some officials. US officials accepted Kurdish intransigence in negotiations and excesses (Rubin, 2005).

economic cooperation with KRG would endure over the next decades as one of economic and strategic partnership, particularly on oil and gas trade (Mills, 2013). Rather, tensions with the Iraqi central government under the Shia-dominated al-Maliki and later al-Abadi governments created problems between Baghdad and Ankara. And there are no foreseeable outlets for the dramatic amelioration of the relations between the Turkish and Iraqi central governments in the near future.

3.3.2 Policy makers' and observers' perceptions of problems and solutions

The interviewees' answers from the main case study of Turkey were, perhaps surprisingly for some readers, not that much different from the other case study countries. But the claim that the US government had lied about the WMDs in the initiation of the war in 2003 indeed opened the door to conspiracy theories. Besides conspiracy theories, overall 12 responses in total (of all the interviews conducted) could not fit any category but "other" according to the semi structured interview.

Oil, which was and in many respects still is perceived as the dominant energy resource, has been often perceived as the main reason for the US occupation of Iraq in 2003. Several of the interviewees made reference to the former U.S. Federal Reserve Chairman, Alan Greenspan's comment that the war on Iraq in 2003 and the removal of Saddam Hussein was "essential" for the global petroleum supply security (Woodward, 2007). There were more Turkish respondents who actually strongly supported the view that it was because of oil, than there were from the other case-study countries. But one has to also consider that the highest number of interviews were from Turkey (17). Looking at a summary of the responses, one has to note that a few skipped that question. Yet, of those who answered there are 2 Turks who support and 3 who mildly support such an argument (5 in total). That is 5 out of 17, which is comparable to the ratio on the France (3 out of 9), but significantly more than the ration in the Netherlands (3 out of 12).

Table 6. Response to Question 7 “Was US operation in Iraq for oil?” in field interviews

Question 7	Response by					
	TR	NL	FR	RUS	ITA	Total
Support	2	1	2			5
Mildly support	3	2	1			6
Mildly oppose	1	3	1			5
Oppose	2	2	1			5
Not one factor	1	1	2			4
Others	4	3	3	1	1	12

As such, yes there was an inclination to blame the US, but the explanations ranged from oil to the Arab-Israeli conflict. Contrary to expectations, only 5 interviewees from Turkey clearly or mildly supported the claim that the US operation in Iraq in 2003 was predominantly for oil. There are relatively large numbers of responses under the ‘Others’ category, because they could not easily classified under a single category. Response categorized as ‘Others’ varied a lot and would not easily fit to a broad category such as “anti-Americanism” either. A common denominator, however, was the emphasis on power rather than oil itself (including the responses that bordered conspiracy theories).

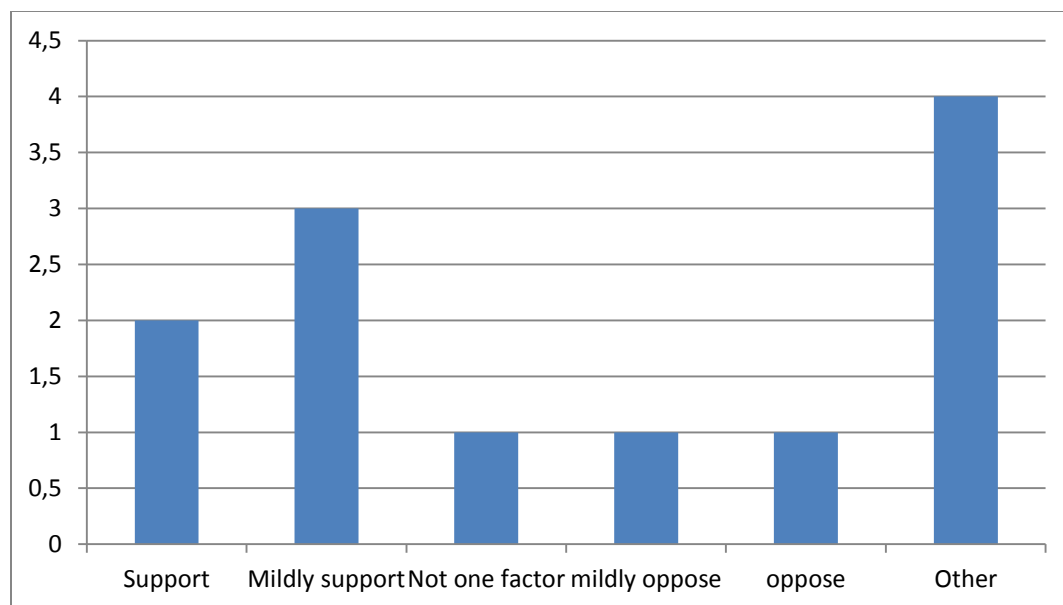


Figure 4. Responses in Turkey to question 7 on 2003 Iraq invasion

3.3.2.1 Short term responses (markets): seeking short term supply/solutions

In the short term, there was not an observable economic measure to contain the negative impact of the Iraq war. The main reason for this was because economically, Turkey had already hit rock bottom due to devastating economic crises. In the words of Erinc Yeldan (2006);

Turkey experienced a severe economic and political crisis in November 2000, and again in February 2001. The IMF has been involved with the macro management of the Turkish economy both prior to and after the crisis, and provided financial assistance of \$20.4 billion, net, between 1999 and 2003.

Furthermore, while the official discourse was that the crisis was mainly due to a lack of austerity and discipline in the public sector, contrary wisdom holds that “the IMF program led to an increase in the vulnerability of the financial system throughout 2000-2001” (Yeldan, 2006). Yeldan (2006) further argued that the structural reforms supposedly designed to reduce vulnerabilities, mainly served the best interests of the foreign finance capital.

Hence, the Turkish governments were severely restrained by an inability to take visible economic precautions. Turkish-American bilateral relations had also hit rock bottom, prior to and in the

immediate aftermath of the 2003 Iraq invasion. Turkey had also requested an aid package as compensation for providing open access through Turkish territory for an eventual invasion of Iraq. Turkey requested aid of \$50 billion, which the George W. Bush administration unsurprisingly found excessive (Güney, 2005).

In the absence of the additional aid package, and with the structural adjustment program of the IMF being implemented, the Turkish governments' room to take economic precautions became extremely limited. However, Turkey did experience a period of rapid economic growth between 2003 and 2013, and arguably the effects of recovering from the 2008 global crisis were both rapid and non-permanent (Ozturkler & Goksel, 2012) at the time when the interviews were conducted. Hence the economic measures were not as observable in the interview process, or in other research, following that particular exogenous shock. In line with the "term structure approach," the Turkish government did not have the capacity to make a short term intervention to adjust to the vulnerability at the time.

3.3.2.2 Long term responses (geopolitics): DMA/EGA (more observable).

Ironically, as indicated earlier, after serious tensions with the Kurdish Regional Government in the mid 2000's, nearly a decade later, Turkey's relations with the KRG had become so amicable that the central government in Baghdad grew concerned that KRG was acting too autonomously. In fact, the salient energy dimensions of this rapprochement with the KRG make it a prominent example of long term "external balancing," which, for the purposes of this research can be classified as an EGA. The relationship has gone from considerable confrontation to energy partnership. This occurred gradually and once the political relationship improved, Turkey saw Northern Iraq as an opportunity to diversify its sources of oil and gas imports (Morelli & Pischedda, 2014).

2003 to 2008 had marked a period of tense relations between Turkey and Iraqi Kurdish leaders, in which a famous analogy about 'not surrendering a single cat' was part of the dominant discourse (*Hurriyet.com.tr*, 2007). By contrast, in 2012, less than 5 years later, the mood had

completely reversed, and Barzani was greeted with chants of “Turkey is proud of you” (*Hurriyet.com.tr*, 2012). Turkey’s profound change from pseudo-antagonism to deep interdependence, collaboration and cordial relations with the Kurdish regional government in Northern Iraq reflects its “external balancing” motivation in terms of energy security. Moreover, the energy trade was the primary factor in the amelioration of relationship (Dombey, 2013). Turkey, which blocked US forces seeking transit into Iraq, became one of the prime beneficiaries of Iraqi energy a decade later. Though its relations with Baghdad were at times bitter, Turkey’s exports to Iraq increased 25 percent a year and were about 10 billion dollars in 2012. Thus until the ISIS threat, Turkey’s second export market after Germany was Iraq.

Similarly, Turkey became the main intermediary for the KRG’s energy exports. As Iraq gets richer from oil and natural gas, its trade with Turkey will increase, however the Iraqi central government does not depend as much on Turkey as does the KRG. For this reason the KRG has to play a careful balance between Turkey and Iraqi central governments. This creates a mutually interdependent and lucrative relationship for Turkey and Iraq. Though Iran is the most influential outside force in Baghdad, Turkey’s economic presence is most visible in malls, furniture stores and other consumer goods and products. But the bulk of Turkey’s business is in Kurdish Northern Iraq (70% of Turkey’s exports to Iraq). After US withdrawal, political relations with Baghdad deteriorated. Baghdad has been accusing Turkey of meddling in their internal affairs, establishing separate relationships with Kurds (especially the Sunni KRG factions such as Barzani and KDP) and the other Sunni factions and groups in Iraq, and thus trying to undermine Shia-led government, while Turkey has accused Baghdad of sectarianism. This could affect future energy contracts of Turkey in all regions of Iraq (Dombey, 2013).

Hence, in spite of a certain episodes of a downward spiral in their bilateral relations (such as divergence on PYD/YPG in Syria), both US and Turkey continue to share many interests in Iraq, and particularly regarding defeating ISIS and sustained economic cooperation with the KRG and in the region. This was one of the reasons why cooperation eventually resumed on many issues of regional politics (Rubin, 2005). Just as US-France relationship improved over time, so did Turkish-US relations. United States’ consideration of its larger regional priorities was the reason for gradual amelioration. Turkey is important as a Muslim majority country with a more

democratic regime than other countries in the region, and is a NATO member. Turkey, for this research, is an important energy transit corridor, linking Central Asia and Caucasus to Europe (Council on Foreign Relations, 2003).

Turkey, was (roughly for a decade from 2002 until 2013) “once heralded as an inspiring model of the compatibility of political Islam and democracy [.....] Turkey can no longer claim to play a leadership role in matters of supporting the international liberal order.” (Piccone, 2016a, 2016b). Even though Turkey was heralded as a model country at the early stages of the Arab spring, domestic and regional political crises and security threats have now, however, further wedged Turkey’s relations with Europe. Domestic stability in politics, economics, safety and security are necessary for Turkey to become an energy hub. Furthermore, if Turkey is to achieve potential as a possible center for energy markets (Kurucak & Shcherbakova, 2016), then investor friendliness, liberal and transparency in the economy (Öge, 2016) are additional features that would contribute to Turkey’s once again becoming a regional leader and model for both economic liberalism, and democracy in a country with a majority Muslim population. And economic and political stability would in turn contribute to Turkey’s strengthening its position as a center of attraction for financial and FDI investments, and becoming a regional energy hub.

The exogenous shock of the Iraq invasion of 2003 revealed how Turkey’s need to diversify energy was preeminent. Internally, increases in investment on domestic resources and capabilities have improved energy security, as observed, for example, in the 20-fold increase in the output of non-hydro renewables between 2005 and 2010, corresponding to the period after the exogenous shock (Table 4). While this is a form of internal adjustment, and therefore DMA, it is relatively modest given the economic constraints Turkey was subject to under IMF rules. It’s worth bearing in mind that Turkish policy-makers were constrained by the structural adjustment loans of the IMF and this limited the subsidies that could be provided to energy investments. Therefore, the increase of non-hydro renewables between 2005 and 2010, before the REFITs law of 2010, is a significant achievement of the markets and policy-makers and thus a significant DMA for our research.

On the other hand, other forms of geopolitical ‘balancing’ that are forms of external adjustments, had actually occurred incidentally just before the exogenous shocks, namely ground being broken

in September 2002 (Stulberg, 2007 : 133) on the construction of the Baku-Tbilisi-Ceyhan (BTC) crude oil pipeline. As such projects take time to initiate, negotiations lasted throughout the 1990's. An intergovernmental agreement was signed in 1999, and ratified by the Turkish parliament in the year 2000 (TBMM, 2000). Eventually this turned out to be a fortunate project that would have been an opportune adjustment for the decrease of oil flow from Iraq, even though a lot of the oil from BTC is exported to third countries. Furthermore, had this project been initiated after the 2003 occupation, it would be classified as a combination of both DMA and EGA. In the 1990's, mostly political factors were the driving force behind the development of major pipelines and energy investments such as the 1768-kilometer Baku-Tbilisi-Ceyhan (BTC) Crude Oil pipeline, which was completed in 2006 by a multinational consortium made up of BP (the lead company), Total, Chevron, and national companies such as AzBTC (owned by SOCAR), STATOIL, TPAO, and ENI and now carries oil from the shores of the Caspian Sea to Ceyhan marine terminal on the Turkish Mediterranean coast (VoA Turkish, 2006; "Bakü-Tiflis-Ceyhan Boru Hattı Açıldı," n.d.). The ongoing instability in Iraq may have been an implicit reason for the timely completion of the project. Its throughput capacity was one million barrels per day from March 2006 to March 2009, but since March 2009 the capacity has been expanded to 1.2 million barrels per day by the use of drag reducing agents ("Baku-Tbilisi-Ceyhan pipeline | Pipelines | Operations and projects | BP Caspian," BP.com 2017). Shortages of oil supply from Iraq may have contributed to the increased global demand in oil, and the BTC consortium responding by such measures to increase capacity. The BTC has been called the project of the century and became the center of global attention, including a theme of the James Bond film "The World Is Not Enough" among others (Apted, 1999, IMDB.com). But furthermore, it laid the groundwork for the next big project, the Trans-Anatolian Pipeline (TANAP).

Some suggest that the matter of accessing energy resources represents a geopolitical "New Great Game" akin to 19th century imperial geo-strategic competition between Britain and Russia (Hopkirk, 1997; Kleveman, 2004). Others, while not denying the competitive nature of having access, argue that it is more important for those resources to be available to the global markets rather than controlled solely by those who actually extract the resource. They affirm the "the golden principle" of mutual interdependence: "As such, the guiding principle of the new great game is that economics is politics and politics is economics" (Stanislaw, 2008). The "term

structure approach” benefits from the intertemporal dimension in its analysis between economics and geopolitics in making such analyses.

Last but not least, Turkey also passed a renewable energy law in 2005, which paved the way to the rapid development of domestic renewables, such as wind energy in particular (Kısar, 2016). Prior to 2005, there were around 20 megawatt (MW) of installed wind power (Kısar, 2016 : 26), compare to 6.106,05 MW by the end of 2016 (TUREB/TWEA, 2017 : 4). This was initiated after the exogenous shock in Iraq, however, significant investments were actually realized after the next exogenous shock, namely the 2005/2006 gas crisis between Russia and Ukraine.

Though the aim of diversification may imply a reduction of dependency on Russia, Turkish Government nonetheless has been actively searching new sources of supply and actively strengthening bilateral relations with Russia (except during the 2015 jet crisis), thus indicating concerns less for a particular actor than for actual availability of supply. By the same token, an example of diversification of supply has been the Turkish governments’ developing relationship with the KRG. The “term structure approach” can explain the incentives and actions towards achieving long term reduction in the government’s vulnerability. The below section further discusses how the concern seems less about particular actors than overall lack of timely availability.

3.4. Responses to exogenous shock: the Russia-Ukraine natural gas crisis of 2005/6

3.4.1 Crisis background

The crisis between Ukraine and Russia in the winter of 2005-2006 was a case of extreme shortage of natural gas for all of Europe. This gas crisis had impacts on Turkey’s search for alternatives and its strategy to become an energy hub. In this respect Turkey already is home to the following pipelines: BTC oil pipeline, BTE gas pipeline, Blue Stream, Iran gas pipeline, Kirkuk-Yumurtalik

crude oil pipeline, potential South or Turkish stream.²⁴ Finally, the Turkish Straits themselves constitute a ‘strategic choke point’ and are a north-south oil tanker corridor, even though it passes through a 13-million person city. By-pass projects (now canceled Samsun-Ceyhan Pipeline or the ambitious Kanal-İstanbul projects) have also been planned. It’s vital that the Kanal-Istanbul project should have the necessary physical infrastructure to contribute to the policy goal of transforming Turkey to an energy hub. Unless accompanied with considerable port-facilities with energy infrastructures such as LNG terminals, similar to Singapore or Rotterdam, Kanal-Istanbul would only re-inforce the transit role of Turkey and would not necessarily help maintaining energy security.

In the face of possible disruption of the supply security, governments contemplated or accelerated alternative projects. For instance, Germany first initiated the North Stream project with Russia. The EU eventually is, with a lag, trying to further develop and solidify the “Energy Union,” in part because policy makers in the EU countries and institutions have grown increasingly concerned with energy security. The Russian state-run Gazprom’s gas cutoff to Ukraine on December 31, 2005, pushed energy to the forefront of the Union’s foreign policy agenda. The Russo-Ukrainian gas dispute triggered a weeks-long cut, revealing numerous EU states’ lingering vulnerability to winter energy shortages and prompting the European Union Council (2009: 2) to call for intensified efforts to diversify energy suppliers, sources and routes (Tekin & Williams, 2009).

Turkey had some limited alternatives at its disposal when the exogenous shock took place. Even though their respective constructions began much sooner, the completion of both the Baku-Tbilisi-Ceyhan crude oil pipeline (in 2006), and the Baku-Tbilisi-Erzurum natural gas pipeline (in 2007) followed the first Russia-Ukraine crisis. The subsequent series of crises between Russia and the Ukraine only reinforced the need for alternatives. It also displayed how the EU, and other consumers of Russian gas could be entangled between the Russian and Ukrainian conflicts of interest (as illustrated in Appendix 9\ Figure 5). Yet it was the initial crisis which had long term repercussions both at the onset of the now still-born Nabucco project and the ongoing TANAP project. Furthermore, this crisis and subsequent ones were important in stimulating policy

²⁴ The construction work of Turkish Stream has started in May 2017.

responses, such as the bilateral South Stream project (now called Turkish Stream) with Russia, in order to establish alternative routes by-passing Ukrainian territory.

In 2004, the year before the crisis occurred, “Russian gas accounted for nearly 40% of total imports” (Stern, 2006). The main routes of exports to continental Europe transited through Ukraine, Moldova and Belarus. Turkey was an exception due to the Turkish Blue Stream pipeline (Finland was an EU country receiving Russian gas directly). By 2005, the Ukraine was in a key strategic position geopolitically because most of the gas from Russia to Europe transited through Ukraine (Stern, 2006). Following political developments in Ukraine and the election of Yushchenko, the new administration in Ukraine asked for the ‘transit’ prices to be raised to European levels. Gazprom in return suggested that, then Ukraine should also pay higher European level prices for natural gas. Subsequent developments resulted in Russia stopping gas deliveries to Ukraine, and Ukraine diverting (siphoning) the gas from pipelines destined to EU countries. This brought a severe risk of shortage of natural gas in Europe in the middle of the winter (Le Monde, 2006; Stern, 2006).

When the first Russo-Ukraine gas crisis that led to a gas shortage across Europe in the middle of winter, the reality hit the European Union hard, with EU member states realizing that a great proportion of the gas was supplied by Russia at that time – 80% according to Stern (2006) – came through the Ukraine (see map below) (*Economist*, 2014). The North Stream gas pipeline from Russia to Germany was not inaugurated until May 2011 (*Spiegel Online*, 2011).

Turkey, having direct access to Russian gas, was “sensitive” to the disruptions of the routes from the Ukraine but not as “vulnerable” as there were also alternatives available from the Blue Stream pipeline, as well as from Iran and Algeria (the latter via LNG). The 2006 Russian-Ukrainian gas crisis provided Turkey with some potential leverage, since EU countries started to reconsider the wisdom of having such a high dependence on Russia as a major supplier (Ertike & Hacıoglu, 2011). Turkey’s geography makes it potentially conducive to becoming a hub, but also locates it between zones of constant crisis. As such, Turkey’s closer energy relations with Russia and Iran do not come at the expense of its relationship with US and Europe (EU); on the contrary, it should be an asset for US and Europe energy security and diversification.

3.4.2 Policy makers' and observers' perceptions of problems and solutions

Based on the interviews conducted, there are some insights from the respondents from Turkey that could be discussed. Responses in this category from Turkish interviewees were not that much different from those of the other respondents, except that Turks tended to view EU policy as being more divided. This is understandable because France and the Netherlands are both within the EU and their responses tended to be less “accusing” of fellow EU states, but differences were not that great. It is interesting that many Turkish respondents were aware of the implications on Turkish energy security of relying overwhelmingly on a single source (i.e. Russia). TANAP (and the previous stillborn Nabucco project) as well as development of the LNG imports (including some small shares from spot LNG markets), have been the policy responses that could be counted as diversification.

On the contrary, having a Russian company build the first nuclear power plant seems to contradict the aim of diversification of source countries. This, on the other hand, can be assimilated into the framework of this dissertation if the concern is more about addressing actual shortage than diversifying away from a specific supplier. Consequently, what might have been missed in these interviews is the possibility of more confidence in the quality and resiliency of economic interdependence between Turkey and Russia. With the exception of the 9-month ‘hiccup’ in the relationship in 2015-2016, many bilateral energy deals were conducted with Russia in the aftermath of the Russia-Ukraine gas crisis.

Table 7. Response to Question 8 “Is Russia using Natural gas as a trump card against the EU?” in field interviews (Details in Appendix 4)

Question 8		Response by					
		TR	NL	FR	RUS	ITA	Total
Response	Support	6	4	2			12
	Mildly support	5	7	3			15
	Mildly oppose	1		1			2
	Oppose	2	1	1		1	5
	Others	1		2	1		4

Table 8. Response to Question 9 “Did Russia-Ukraine Crisis cause a shift in EU policy?” in field interviews (Details in Appendix 4)

Question 9		Response by					
		TR	NL	FR	RUS	ITA	Total
Response	Support	4	7				11
	Mildly support	3	4	4			11
	EU divided	5	1	3			9
	Others	2	2		1	1	6

Furthermore, Turkish respondents mostly seem to believe that Russia was using natural gas as a trump card against the EU. It follows from this perception that the Turkish governments’ ambition has been to become an energy hub where both Russian and non-Russian gas could be available to the world and European markets. On the question of whether Russia-Ukraine crisis caused a shift in EU energy policy, Turks seem to be, to some extent, indifferent, although there is a sizeable minority who say that EU is divided on this issue.

3.4.2.1 Short term responses: seeking short term external supply/solutions ex; LNG and Wind

Turkey, in the short term, did not initially make that much of a radical change. A first significant aspect was the astronomic growth in renewables and particularly of wind turbines installation as these can be established in a relatively short to medium-term basis. Wind energy after the passing of the 2005 law on renewable energy grew by over 100% per year since the initiation of the law until the end of 2009 (Kısar, 2016; TUREB/TWEA, 2017 : 4-5). However, in spite of a rapid growth of installations and investments, these were still modest developments. In the short term, as a DMA type response to the exogenous shock, the growth of wind energy was still a factor worth noting as in terms of percentage, they correspond to the aftermath of the exogenous shock. Although in terms of percentages, 100% growth levels were not attained after 2010, in terms of

absolute value, the biggest growth of investment realized was actually in 2016 with the installation of 1.387,75 MW in a single year (TUREB/TWEA, 2017 : 5).

There were more immediate solutions based on augmenting short term supply, such as importing LNG. The reasoning for LNG imports being considered in this research as DMA and the case of Turkey were discussed earlier in Chapter 2. The introduction of new purchases from the spot LNG markets in addition to a considerable increase of LNG imports from Algeria and Nigeria were the most visible solutions in the immediate aftermath of the said exogenous shock. Again, it's worth bearing in mind that there was virtually no natural gas purchased from spot LNG before 2005, and spot LNG has gradually increased since then, eventually leading to a creation of a spot market in Turkey (EPIAS/EXIST) and direct flights to Doha, Qatar from Ankara have been introduced in 2010 as well (Turizm Tatil Seyahat, 2010). Given the importance of Qatar for natural gas (Benmayor, 2012), this also provided travel ease for economic cooperation, including for opportunities to trade spot LNG. But such activities still only constitute a small fraction of Turkey's LNG imports and an even smaller percentage of Turkey's natural gas imports. Importation of LNG in the immediate aftermath of the exogenous shock caused by the Russia-Ukraine crisis resulted in an increase of roughly 10% more total LNG importation (including from spot markets) in 2006 than in 2005 (EPDK/EMRA, 2011).

Table 9. Amount of imported natural gas in $\text{Mm}^3 \cdot 15^\circ\text{C}$ by source country between 2005-2015

Amount of Imported Natural gas (Mm^3 at 15°C)							
year	Russia	Iran	Azarbaijan	Algeria	Nigeria	Others*	Total
2005	17.524	4.248		3.786	1.013		26.571
2006	19.316	5.594		4.132	1.100	79	30.221
2007	22.762	6.054	1.258	4.205	1.396	167	35.842
2008	23.159	4.113	4.580	4.148	1.017	333	37.350

Table 9 (cont'd)

2009	19.473	5.252	4.960	4.487	903	781	35.856
2010	17.576	7.765	4.521	3.906	1.189	3.079	38.036
2011	25.406	8.190	3.806	4.156	1.248	1.069	43.874
2012	26.491	8.215	3.354	4.076	1.322	2.464	45.922
2013	26.212	8.730	4.245	3.917	1.274	892	45.269
2014	26.975	8.932	6.074	4.179	1.414	1.689	49.262
2015	26.783	7.826	6.169	3.916	1.240	2.493	48.427

Source: Annual Report by EPDK/EMRA on Turkish Natural Gas Market Report 2015 (Final V3), pg. 8, Table 2.1 (Accessed 26 March 2017) (EPDK/EMRA, 2016 : 8).

NOTE: * Sm3 means Standard m3 (temperature is 15 degrees Celsius) (Hetland & Gochitashvili, 2006 : 415) NOTE: ** Others represent the countries of imported spot LNG

3.4.2.2 Long term responses (geopolitics): DMA/EGA (more observable).

One of the long term Turkish responses involving international market mechanisms is the further development of LNG facilities, natural gas storage, and even some spot LNG imports from virtually zero in 2005 to even importing from the United States in September 2016 (AA, 2016). Even though spot LNG may have been initially a palliative solution, it could be on its way to evolving into a viable long term alternative. However, when the current imports are compared to those of September 2015 (as in Table below), it is clear that spot LNG from the United States has effectively substituted for gas imports from Nigeria. Hence, the percentage of actual LNG is still relatively small compared to the bulk of gas that is imported via pipelines, and that of spot LNG is even smaller.

Furthermore, LNG requires considerable infrastructure investment. These infrastructures, such as LNG terminals, facilities, are critical infrastructure facilities, and have a ‘strategic’ nature. Therefore, investment in them are DMA responses to maintain energy security (as discussed in chapter 2), because these investments are domestic and internal, ownership is also mostly local, and their presence increases the national capacity. Just as France developing a nuclear power plant, even though it’s a critical infrastructure with strategic context, is considered DMA for France, Turkey also develops LNG facilities mostly within internal capabilities. Perhaps more importantly, many of these critical facilities are owned by BOTAS, the state company. For example, Lake Tuz natural gas storage facility is owned by BOTAS, and hence is essentially DMA.

For example, the recent (June 2017) crisis between Qatar on one hand and on the other side Saudi Arabia, UAE, Bahrein, Egypt, Maldives, led to a serious shortage of food supply to Qatar (Bar’el, 2017; Fisher, 2017; Hiltermann, 2017; “Türk askeri Katar’a ulaştı,” n.d.). Food, very limitedly produced in Qatar, is imported from the international markets (spot markets). However, in the event of such a political crisis creating an exogenous shock and preventing food supplies to Qatar, the additional food that Qatar would seek (especially in a state of emergency) are EGA type adjustments and not DMA. They cannot be DMA because they are not available at all in the domestic market, nor can they be easily be imported to the domestic-internal market.

For natural gas and LNG, it is all the more natural to consider their imports as EGA because they are strategic goods and often supplied by government contracts. When facing shocks, governments become even more involved in their speedy supply and thus contracts, qualifying them more strongly as EGA.

Just as in the food supply, if additional agricultural facilities that are invested and/or owned by domestic companies (state owned or private, including foreign companies operating as legal tax paying Tüzel Kişilik within the country), then they would be DMA. However, if these investments were by foreign companies in BOO model and importing critical technologies that would not be made available or limitedly available to the host country (essentially acting as the Builder, Owner and Operator) then those investments would become EGA as well. Either way, as said earlier, the LNG and Nuclear investments in Turkey are of particular/exceptional cases to the general notion

on EGA and DMA, and would be interesting to discuss them in a future study with greater comparison to other strategic products such as water or food supplies (or medicine/specific chemicals or pesticides for other countries).

Table 10. Comparison of the amounts of natural gas (Million Sm³) imported and their percentages among imports by countries during September 2015 and September 2016 periods (EPDK/EMRA Natural Gas Market Sectoral Report, September 2016 / Dogalgaz Piyasasi Sektor Raporu, Eylül 2016 pg. 7 (Accessed 26 March 2017))

Country of Origin	2015 September		2016 September		Change (%)
	Amount	Share(%)	Amount	Share(%)	
USA	0.00	0.00	81.12	2.70	100.00
Azerbaijan	458.48	12.44	519.25	17.26	13.26
Algeria	384.30	10.43	298.33	9.92	-22.37
Iran	658.12	17.86	518.60	17.24	-21.20
Nigeria	175.28	4.76	82.96	2.76	-52.67
Russian Federation	2.008.48	54.51	1.507.35	50.12	-24.95
TOTAL	3.684.66	100	3.007.63	100	-18.37

Table 11. Amount of Natural Gas (in M Sm³) imported between September 2015 and September 2016 period by pipelines or by LNG from various countries. (EMRA Natural Gas Market Sectoral Report, September 2016 / EPDK Dogalgaz Piyasasi Sektor Raporu, Eylül 2016)

From	Gas from Pipelines			LNG			Total
	Azerbaijan	Iran	Russia	Algeria	Nigeria	Other*	
2015	458.48	658.12	2 008.48	384.30	175.28		3 684.66
	3.125.08			559.58			
2016	519.25	518.60	1 507.35	298.33	82.96	81.12	
	2 545.21			462.42			3 007.63

* Spot LNG imports

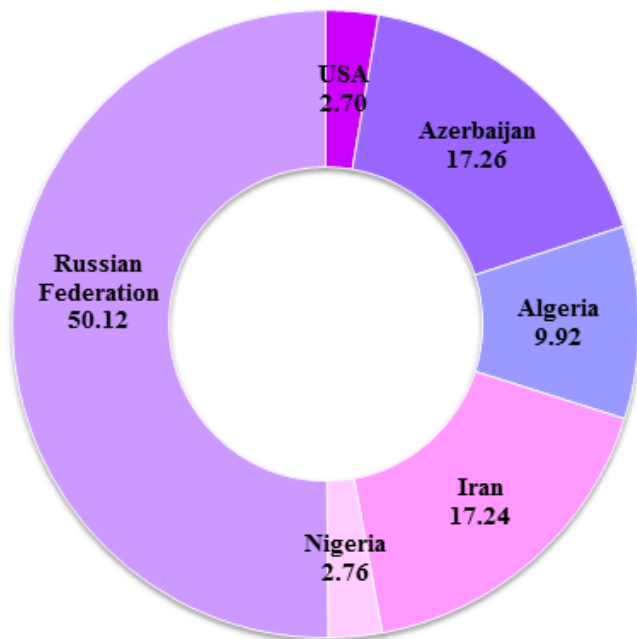


Figure 5. Shares of the September 2016 natural gas imports categorized in percentage according to the country of origin (EPDK/EMRA Natural Gas Sectoral Report, September 2016 (Dogalgaz Sektor Raporu Eylül 2016)).

Gradually or moderately, although Turkish governments initially did not do too much, a combination of DMA and EGA took place. For example, the failed attempt of the Nabucco project, subsequently followed by the successful TANAP with Azerbaijan and South Stream / Turkish Stream with Russia are among the most observable examples of external responses based on making physical investments on particular geographies. It's worth noting that the contrast between TANAP and Turkish Stream suggests that DMA / EGA responses are more likely to occur in response to the "geopolitical event" of uncertainty of future flows of gas through a particular geographic route (such as Ukraine). The increase of domestic renewables also took place largely in the aftermath of the Russia-Ukraine crisis (World Bank, 2015).

The LNG spot market, however, relies heavily on extant physical infrastructure, such as storage and LNG terminals, in particular regasification facilities for imported LNG. LNG spot market also requires extensive storage capacity. Though LNG and special tanker vessels are becoming more common, they still require ports with special liquefaction and regasification facilities. This complicated and expensive process was less common in the 1970s and 1980s.²⁵ These are the physical dimensions of market mechanisms that may eventually evolve based on supply and demand shifts. However, infrastructure may have to be initiated or even championed by governments, as in the BTC and TANAP cases. As of date, the amounts imported through the spot market remain modest and may offer only partial solutions in the event of a sudden disruption of supply.

By contrast, the major investment to ensure continuous supply over the same period of time has remained pipelines. Turkey's seminal post-Cold War experience with pipelines can be traced to the BTC project's development. However, one of the first "politically significant" natural gas pipelines to Turkey resulted from an agreement with the Soviet Union in the 1980's. The "pipelines episode" of the Cold War occurred when natural gas pipelines were being built to

²⁵ Oil and Natural Gas markets, until relatively recently, were linked to one another, and oil was an important factor in the formulae for long term natural gas supply contracts. This was because, unlike petroleum, natural gas requires more expensive infrastructures for transportation, and its prices on the spot market show greater regional differences to this day.

Western Europe as well as to Turkey. Natural gas requires large pipeline and network infrastructure, which in turn encourages having long term purchase contracts with a certain amount of guaranteed buying (“use or pay”).

Russia (or Soviet Union until 1991) became an important supplier for Europe and Turkey during the Cold War and continued to hold its preeminent place in this regard, a topic of much debate by American policy makers as well. Because of the dominance of Russia as a supplier state, the quest to diversify has been a major issue ever since these pipelines from the USSR were first built to Europe. At the onset of the gas pipeline deals, there was fierce opposition in Washington against these pipelines for fear that they would render Europe over-dependent on the Soviet Union. In many ways, this parallels with what is being discussed nearly 30 years later. Today, hawks in the US administration and many European elites have once again grown wary of dependence on Moscow-controlled energy supplies. They feared this could be a trump card against the western countries. Liberals, which perceive the economic relationship as one of mutual interdependence, on the other hand, saw (and still see) this as an opportunity to build economic cooperation between the East and the West. The more liberal view believed that this new economic relationship would solidify interdependence, which in turn would be crucial for maintaining good relations, peace and stability. After all, the European Coal and Steel Community, which was the starting point of the European Union, had been initiated from the onset on the basis of same strategic and economic logic of interdependence.²⁶

The energy dimensions of the Cold War in general and the role of the Soviet oil and gas particularly (even more specifically the 1980’s pipeline episode) are topics that are still largely under-researched.²⁷ The episode came again to the attention of scholars in recent years, following the Russia-Ukraine crises.²⁸

²⁶ The recent BREXIT referendum in 2016 seems to counter this claim. However, it could be argued that Britain had perhaps been one of the least integrated countries of the EU. Though a very pertinent debate, it is less pertinent for the case of Turkey in this research.

²⁷ An exception is Anthony Blinken, who discusses how Europe and the USA view the prospect of trading with the Soviet Union quite differently, and how the 1980’s pipelines episode was affected from such fundamental difference of opinion. : Reviewed by William Diebold, Jr. of the book by Antony J. Blinken, (“Ally Versus Ally,” n.d.)

²⁸ A conference in Zurich in January 2015 entitled “Oil, Gas and Pipelines: New Perspectives on the role of Soviet Energy during the Cold War” discussed the energy aspects of the economic containment in the Cold War, with

On the other hand, Moscow too had (and may still have) reservations about becoming export dependent on foreign markets, especially in the “West.” Today, Russia, for its own security, is concerned about the access and availability of a stable market to sell its goods (i.e., demand security). Since 2015, the United States and the West have imposed certain economic sanctions on Russia and particularly on the entourage closest to the Kremlin. The Reagan administration had warned that a Russian pipeline through Ukraine would weaken the West and provide an economic leverage in the hands of Russia (Shapiro, 2014). The Trans-Siberian Pipeline, which passes through present-day Ukraine, was built in the early to mid-1980’s in spite of the Reagan Administration’s opposition. A 3,000-mile pipeline to bring Siberian gas to Europe was the biggest East-West cooperation project yet undertaken. European leaders saw it as a chance to diversify Europe’s energy sources away from the OPEC, and also as part of advancing ‘Ostpolitik’ -- the German strategy of engagement with the USSR.

The above discussion describes the overall political circumstances under which the first pipelines from the Soviet Union were built to Turkey in the mid 1980’s, during the Ozal administration. In the long run, such infrastructure (to Europe including Turkey) helped Russia transform into an energy superpower. But this relationship also made the Russian state more dependent on revenues from energy exports.

This economic interdependence characterizes Turkish-Russian relations today. However, the relationship is not necessarily symmetrical, as it’s mostly criticized to be in Russia’s favor (Öniş & Yılmaz, 2016). As it could be implied and understood, although it’s a very significant market for Russia, Turkey is just one of the many regional partners in the field of energy for Russia (Lomagin, 2015, example on Rosatom pg. 158 demonstrate Turkey as one among many other partners in the field of nuclear energy for Russia). Russia has become the largest exporter of oil and natural gas to the EU and to Turkey. As shown in EPDK/EMRA (Figure 8 above) depicting shares of imports from country of origin, with 50% of all natural gas supplied in 2015, Russia

comparisons to today: The Conference entitled “Oil, Gas and Pipelines: New Perspectives on the Role of Soviet Energy during the Cold War” that took place on 14-16 January 2015 in Zurich was an important milestone in this respect. (<https://www.infoclio.ch/fr/node/136887>)

remains the single greatest gas exporter to Turkey. According to EU Commission on Energy Issues report, Russia supplies roughly a third of Europe's oil imports and nearly 40% of its gas imports (Kaplan and Chausovsky, 2013.).

Russia's energy superpower status is rooted in the state-owned Gazprom, the world's largest extractor of natural gas, which accounted for 8 percent of the country's GDP in 2011. The West and Russia should take lessons from the 1980's episode. And the most important perhaps should be that today, as in the 1980's, it is better to engage Russia rather than imposing sanctions ("Sanction Russia?," 2014). Although, it's assumed that both the US and EU governments have calculated the effects of these sanctions, the adverse effects seem to be more closely felt by EU countries. Similar to the 1980's, in spite of sanctions, it was recently announced that major European energy companies would fund the Nord Stream 2 Project;

A consortium of five companies--Engie, OMV, Royal Dutch Shell PLC, Uniper and Wintershall Holding GmbH--said they would provide up to € 4.75 billion (\$5.1 billion) in long term financing to Nord Stream 2 AG, a wholly owned subsidiary of Russia's state-owned Gazprom. Each European firm would fund up to 950 million (Peker, 2017).

History seems to be repeating itself in the field of pipeline politics. The benefits of economic engagement may nowadays also be better than resorting to stiff and uncoordinated sanctions ("Ally Versus Ally," 2016).²⁹ This seemed to be an initial approach that President Trump intended to adopt President Trump ("Trump and Putin 'will try to mend ties', Kremlin says," 2016). Instead of resorting to the economic sanctions, adjusting and modifying the structures through projects such as the Trans-Adriatic Pipeline (TAP) ("Trans Adriatic Pipeline," n.d.), the Trans-Anatolian Pipeline (TANAP) ("MAJOR SHAREHOLDER IN THE PROJECT OF THE CENTURY! | TANAP," n.d.), and the Baku-Tbilisi-Ceyhan Pipeline (BTC) ("Baku-Tbilisi-Ceyhan pipeline | Pipelines | Operations and projects | BP Caspian," n.d.), may better help the access to energy resources. New pipelines would offer greater flexibility and availability in

²⁹ From review by William Diebold, Jr. of the book by Antony J. Blinken, "Ally Versus Ally: America, Europe, and the Siberian Pipeline Crisis," Review published in Winter 1987/1988 issue of Foreign Affairs, accessed January 17, 2016, <https://www.foreignaffairs.com/reviews/capsule-review/1987-12-01/ally-versus-ally-america-europe-and-siberian-pipeline-crisis>.

addition to the Russian Blue Stream, North Stream, and South Stream projects. Hence availability rather than ‘balancing against a specific actor’ are primary motivations in the long run.

Hypothetically, and based on observations and from interviews, this energy-centric calculation on balancing energy security by increasing the supply sources and becoming a hub is a driving factor in Turkey’s relationship with Russia. However, this eagerness to collaborate may not necessarily apply in non-energy areas of Turkish-Russian relationship (i.e. limitations on agricultural products, NATO alliance policies, Crimea, Eastern Mediterranean, Syria, Iraq, PKK, PYD/YPG, etc).

In addition to the Energy relationship with Russia, one of the most important of those is arguably the Trans-Anatolian Pipeline (TANAP) project (as depicted in Appendix Map 4), which is being built by a consortium led by the State Oil Company of Azerbaijan Republic (SOCAR), the BOTAS, and also BP.³⁰ Map of Tanap Available in the Appendix.³¹

TANAP is in some ways similar to the BTC project because it was initiated via intergovernmental agreements. But it took the know-how and learned from the BTC experiences about project management. Instead of going to a port terminal, the TANAP natural gas pipeline will be connected to the Trans-Adriatic Pipeline (TAP) between Greece and Italy (through Albania), and to the South Caucasus Pipeline(SCP) (from Azerbaijan Shah Deniz 2 fields to Ardahan Posof Turkey, via Georgia). With connection to the TAP (in Edirne Ipsala) and to SCP, the combination of three separate projects constitute together a value chain referred as the Southern Gas Corridor. Unlike the BTC international consortium, the three different companies that constitute the Southern Gas Corridor value chain (TAP, TANAP, and SCP) are consortia where SOCAR is either the majority or for the case of TAP as the largest partner. In TAP, SOCAR has 20% shares similar to BP and Snam S.P.A. (TAP AG, n.d.; “TAP at a glance,” n.d.). The entire Southern Gas Corridor value chain connects natural gas from Azerbaijan to Italy. This

³⁰ Major Shareholders of Tanap: <http://www.tanap.com/media/press-releases/major-shareholder-in-the-project-of-the-century/>

³¹ Map from TANAP website main page: <http://www.tanap.com/> and available in Appendix 9 Figure A 10.7

characteristic may have been necessary for various reasons, but perhaps most likely in order to realize the value chain in different phases. The process to start and realize BTC took over a decade (mid-1990's until 2006), and given the experience, this could have been a reason for dividing the consortia, but it could have been coincidental as well. On the other hand, it's also noticeable that TANAP later included BP in the consortia (BP.com, April 2015) in order to reflect the past success among the BTC partners, and boost the project's credibility and continuity with TAP. The TANAP project's initial anticipated completion date is around 2020.

One might expect that Turkey should perhaps take more important steps for diversifying away from Russia instead of increasing its dependency on Moscow. Turkey is caught between its “energy hub” aspirations, its strategic relations with the West, and its well-developed business relations with Russia and to some extent with Iran. Crises like 2006 Russia-Ukraine gas crisis, the 2008 Russia-Georgia crisis and lately the Crimea crisis bring this challenge for Turkey to the forefront. But growing ‘Euro-skepticism’ and sense that the West (Europe and the US) have not shown solidarity with Turkey even long before the 15 July 2016 coup attempt have added reasons to further develop bilateral relations with Russia. Following the July 15 coup attempt, the development of commercial and economic relations with Russia, including on energy, resumed and is seen as more important than before. This is not to say that Turkey and Russia would have a ‘security’ partnership as an alternative to the West, but it certainly suggests that case in the domain of energy, in spite of criticisms, more ‘strategic’ investments on the energy sector may follow in the following years (“Akkuyu nuclear power plant turns into strategic investment,” n.d; “Akkuyu’nun riskleri neler?,” n.d.)

These could have been read as some of the signals for Turkey in its relations with Russia. Now that the bilateral crisis between Russia and Turkey has moved back to normalization,³² business and energy businesses are likely to resume. Turkey has room for maneuver on the economic front, given that the EU membership process is effectively at a stand-still.

³² A Russian fighter jet was shot down for violating Turkish Airspace on the Syrian border.

The Western strategic partners of Turkey do not have a uniform approach to these issues. Some of them hope for less reliance on Russian gas; but for others this is not a problem. As an example, for Germany the transit problem Russia had with Ukraine was a risk. But for Germany, the Russian gas itself was not a risk, and therefore the North Stream project (operational in 2011) was developed to bring gas directly under the Baltic Sea to Germany. While some see this move as undermining the EU's energy solidarity, others consider it as an extension of mutual energy dependence between Russia and EU (Paillard, 2010). Overall, the issue seems to be treated as too important to be compromised by political differences. The recent decision to agree on Nord Stream 2, in spite of ongoing sanctions regime, suggests a *deja vu* from the 1980's. Major European energy companies such as the Royal Dutch Shell (Netherlands), Engie (France) and OMV (Austria) would fund the Nord Stream 2 (Foy & Toplensky, 2017).

Turkey's leaders are treading carefully around such crises and the dilemmas they may pose. For example in the Georgia crisis, although Turkey has called for Georgia's territorial integrity to be respected, it has refrained from embracing the stronger rhetoric coming out of Washington and Brussels. Turkey's approach seems to be congruent with the European one, namely to separate pipeline deals from the rest of the sanctions, as those resources are too important to become subjects of other differences.

EU officials' cognizance of Turkey's crucial role in energy transit will not automatically lower many member states' entrenched resistance to Turkish membership. Even the Energy Chapter of Turkey's accession negotiations has been blocked by Cyprus (Greek Cypriot Administration), a member state that has had tensions with Turkey over offshore oil and gas exploration in the Eastern Mediterranean (Grigoriadis, 2014). Furthermore, Cyprus (Greek Cypriot Administration) is an EU member state that also aims at becoming an energy hub, and in that respect competes with Turkey.

In sum, the Russia-Ukraine gas crises may have increased Turkey's importance and energy hub role for all of Europe. However, Turkey is carefully balancing its relations with Russia, which is considered an ever-growing economic partner. This was due to the belief that there's a need to maintain a balance and good relations with Russia (and in other cases with Iran). The impact of

November 2015 Turco-Russian fighter jet downing crisis and temporary deterioration of relations between Turkey and Russia, was a hiccup in a trend of growing relations.

Since the exogenous shock caused by the 2005/2006 Russia-Ukraine crisis (and then subsequent crises) has been the operation of the ‘term structure approach’ distinguishing short term market effects and long term geopolitical /political policy. In the short term, palliative solutions were sought with LNG imports. But in the long term, at the economic front, spot LNG purchases grew, and an energy spot market was created (EPIAS/EXIST) mainly for electricity but also for other energy products such as LNG. However, these measures have been subject to major infrastructure investments since and the need to develop alternatives in the long run. The development of natural gas storage facilities are some examples of responses to develop such alternatives (*Daily Sabah* 2016, 2017). The project had officially initiated in 2011 after signature with the Chinese Tianchen Engineering company. However, the state natural gas company BOTAS had concluded preliminary work including funding agreement with the World Bank as early as 2006 (TRT Haber “Tuz Gölü’ndeki gaz depolama tesisi bugün açılıyor,” 10 February 2017). The important observation is that the motivation to balance was not specifically against a particular actor, but rather about securing access and availability of resources. One such important investment was in nuclear energy, which will be discussed in the following sections. Furthermore, Turkey has increasingly expressed in recent years the objective to become an economic/financial hub where the trade of the financial derivatives of these products are also traded (“Turkish Ministry of Foreign Affairs, mfa.gov.tr, retrieved 16 /03/2017”). For instance, recently-retired Ambassador Rende’s remarks suggest a vision for becoming an economic/financial as well as a physical hub, with an emphasis on natural gas:

Italy, and in spite of its small market Greece, are continuing an intensive competition on this issue [to become a natural gas trade center]. It’s important that Turkey clearly lays out its objective to become a center for natural gas trade (*Dunya.com*,2016).³³

³³ Original article from *Dunya Newspaper* in Turkish saying: Italy and in spite of its small market Greece, continue to have an intense competition with Turkey on this issue. It’s important for Turkey to openly lay out its goal of becoming a natural gas trade center. (“..İtalya ve küçük piyasasına rağmen Yunanistan, Türkiye ile bu konuda yoğun bir yarış sürdürüyor. Türkiye'nin doğalgaz ticaret merkezi olma hedefini açık olarak ortaya koyması önemli.”).

Turkey's aim is to become an economic and physical hub for energy, and yet the geopolitical framework would set how and when markets would operate within this hub. Economics and finance are still the other important elements of the 'term structure approach' and therefore the section below considers the World Economic Crisis that began in 2008 and became apparent in 2009 onwards. In light with it is also observable that Turkish Government has been actively searching for new sources of supply and has been simultaneously strengthening ties (in that sense EGA) with Russia (except the 2015 Jet crisis), thus indicating concerns less about a particular actor but truly about actual availability of supply. After all, it is the supply that is needed for both maintaining energy security through a policy response classified as EGA, and to become an economic hub that would contribute to become a center of finance in energy trade.

3.5. World economic crisis since 2009 and oil price fluctuation

3.5.1 Crisis background

The mortgage crisis in the United States in 2008 has been the starting point of one of the greatest global economic crisis since the Great Depression in 1929. Its consequences were heavy on oil prices and oil price fluctuations. Banks were at the center stage of this crisis and were one of the main reasons why global financial markets were so negatively affected. In the words of Ivashina and Scharfstein (2010):

The banking panic in the fall of 2008 threw economies around the world into severe recession. The seeds of this panic were sown in the credit boom that peaked in mid-2007, followed by the meltdown of subprime mortgages and all types of securitized products. This meltdown, in turn, raised concerns about the solvency and liquidity of financial institutions, becoming a full-blown banking panic following the failures of Lehman Brothers and Washington Mutual, and government takeovers of Fannie Mae, Freddie Mac, and AIG. Although the panic subsided in the first half of October after a variety of government actions to promote the liquidity and solvency of the financial sector, the prices of most asset classes and commodities fell drastically, the cost of corporate and bank

borrowing rose substantially, and financial market volatility rose to levels that have rarely, if ever, been seen.

In a bold statement, however, the Turkish Prime Minister at the time stated that the crisis would only touch (“*teğet gececek*”) the Turkish Economy slightly (*Cumhuriyet*, 2008). Indeed, Turkey felt the effects of the 2008 and 2009 crises relatively less than the eurozone. While most European countries faced major recession and experienced negative growth levels , Turkey experienced slowdown in 2008 and a modest contraction in 2009. Unlike the rest of the EU (again except from Germany), the Turkish economy picked up soon after. And by 2010, the economy experienced an amazing growth of 9.5% and again of 8.5% in 2011. When averaged over a period of 10 years, Turkey’s growth between 2003 and 2013 was around 5% per annum. This is considerably higher than any country in its region. Consequently, due to such rapid economic growth, primary energy consumption also grew in the same period (2003-2013) at an average of approximately 4% per year (Ministry of Energy, 2014).

Indeed, the Turkish economy was relatively more robust because it had undergone considerable structural adjustments and reforms that were demanded by acceptance of the IMF loans following the 2001 crisis. Arguably, due to the structural adjustment policies, the ‘vulnerability’ of the Turkish economy was reduced as far as the general structure of the economy as a whole is concerned. But this is distinct from Turkey’s position vis-à-vis energy crises, where Turkey was in the same period still vulnerable (and arguably still remains vulnerable) in the face of energy crises. By 2008, Turkey’s economy in general was less vulnerable to exogenous global economic crises than the previous crises of 1994, 1998-1999, and 2001. The effects of the 2008 crisis were certainly not comparable to the devastating previous financial crisis in 2001. An important consequence, however, was a lack of initial policy reactions, not only for energy, but in the interest rates and other financial policies by the Turkish government, already 6 months into the crisis. This inaction was likely due to the 2009 crisis not being felt as gravely (Ozatay, 2009 : 153-154). As a primarily consumer and transit nation, Turkey was not ‘complaining’ about falling energy prices either.

The effects of the crisis on Turkey were not completely benign though regarding the prices of energy, as these are set by global markets. One particular event of importance for energy security, making the global crisis an exogenous price shock, however, was the effect this global economic crisis had on instigating what would become a period of extreme oil price fluctuations. According to Dr. Erol Metin, the Secretary General of the Association of Petroleum Industry, global financial crisis of 2008 had multifaceted impacts and has led to some important results for Turkey:

...additional burden of financing caused by the increasing number of claimants due to the problem of liquidity in the market; Additional price risks and additional high costs brought on the corporations due to the obligatory petroleum stocks caused by steep fluctuations in the prices of petroleum and its products in the international markets; shrinking of the market due to the decline in demand; the price intervention to the petroleum market in 2009.³⁴

As deduced from Dr. Metin's comments, there were, and still are, important continuous vulnerabilities in the energy market, particularly apparent in the oil trade. These may in turn have potentially negative effects in the long run. What was apparent from 2008 until 2015 was a period of extreme fluctuation and price instability for petroleum.

Global oil prices were quite flat until the 1973 Yom Kippur war and the aftermath embargo imposed by the OPEC (Kesicki, 2010). Since then, there have been several events and responses that caused fluctuations of oil prices. Oil, the most important energy commodity in the 1970's is still a strategic natural resource. From 2003 to 2008 there was a significant global oil price hike with prices approaching \$150 per barrel (Kesicki, 2010). However, new technology in alternative drilling as well as discovery of new sources of supply, have produced a supply glut, at a time of low global demand due to persisting global recession since 2008. The recession was not immediately felt by the non-OECD Developing markets such as the BRICS (Brazil, Russia, India, China, and South Africa) as well as the Asian markets until a few years ago (2013 onwards). Now,

³⁴ Dr. Erol Metin, Secretary General of the Association of Petroleum Industry, "The Impact of Global Financial Crises on the Fuel Sector"; July 2010. <http://www.petder.org.tr/uploads/2013/05/e01dc7a9fba556e772b9d3c7ac0b3fb2.pdf>

while there are signs of some forms of recovery or at least stability in the economies of the United States and Western Europe, for the most part, the global economy is not experiencing the growth cycles that were observed from 2003 to 2008. Hence the glut of supply, accompanied by a weak demand, has been identified as the main source of the weak oil price in 2015 (EIA: “Cushing, OK WTI Spot Price FOB (Dollars per Barrel),”).

Dynamics of such price fluctuations can also be observed after events in the global economy and/or political events that may increase the risk of supply interruptions. For instance, the rapid fall in the crude oil price from \$147 Brent oil to below \$40 in 2009 was not only due to the economic crisis, but also in part arguably due to a speculative bubble triggered by paper-oil. It was the bankruptcy of the financial companies (Ivashina & Scharfstein, 2010)) that had bought over-valued and highly speculated hedge funds that for most part had used paper derivatives in oil commodities. The financial and banking industry was so adversely affected that governments, including the USA had to proceed with controversial and huge rescuing deals to salvage the banking industry.

The Arab Spring was another factor that in turn led to a gradual increase in prices. At the height of the Libyan crisis, crude oil reached as high as \$120 per barrel. The crises, especially regarding the interruptions or fear of interruptions, kept the prices once again above the \$100 levels from 2011 onwards, until they fell once again after 2014.

The prices were on the floor once again due to the global economy’s inability to recover from the continuous period of recession, which in fact worsened by slowing growth in previously rapidly growing Asian economies, particularly the People’s Republic of China. This time, not even the instabilities in Africa due to Boko Haram, in Syria and Iraq due to ISIS, or the crises in Ukraine which led to the secession of Crimea and its later annexation with Russia, were insufficient to cause a price hike. From an economic perspective, it logically follows that the economic recession is so strong that not even major geopolitical events are able to cause fear of a possible supply shortage and thus drive demand and subsequently prices upwards. Yet one has to bear in mind that there has been a change in technology as well as OPEC’s inability to impose a reduction in

supplies due to Saudi Arabia's continued willingness to supply oil at its regular levels at times of floor prices.

Global oil prices fell below \$ 100 per barrel on August 2014 and have stayed at low levels since.³⁵ This has had some systemic level changes on the global oil reserve balances and the US becoming less dependent on petroleum. This fall in prices is attributed to several factors, including technological breakthroughs in extracting unconventional oil and gas resources, renewables such as solar panels becoming more affordable and widespread, and weak global economy, resulting in lower levels of demand. Only recently the United States reconsidered allowing the export of petroleum. This was possible because the USA, due to the technology of unconventional oil, became the world's largest oil producing nation since 2014, and global oil prices have reached their lowest since 2003, (as in Figure 7).³⁶

Today, crude oil prices are low again, and recently for the first time, the USA has been on the verge of becoming a net exporter of oil. On January 15, 2016 prices were briefly below \$30 per barrel (Recently WTI at \$41.8 (Bloomberg.com :“CL1 Commodity Quote - Generic 1st ‘CL’ Future,”) and Brent at \$44.3 (Bloomberg.com: “CO1 Commodity Quote - Generic 1st ‘CO’ Future,”) per barrel On August 5, 2016) and picked up again by December 2016 to \$53 for the WTI and \$56 for Brent (<https://www.bloomberg.com/energy> 12 December 2016) as Saudi Arabia signaled its willingness to implement cuts following OPEC and Non-OPEC producer meeting (“Oil Seen Headed to \$60 as Saudis Signal Deeper Output Cuts,” www.bloomberg.com n.d.). This

³⁵ The 5 Year Price Indicator of both WTI and Brent suggest August 2014 as a critical time when the prices fell below \$100 per barrel. (“CL1 Commodity Quote - Generic 1st ‘CL’ Future,” n.d., “CO1 Commodity Quote - Generic 1st ‘CO’ Future,” n.d.)

³⁶ Source of rise in US oil production: U.S. Energy Information Administration Total Petroleum and Other Liquids Production 2014 <http://www.eia.gov/beta/international/rankings/#?product=53-1&cy=2014> [Accessed: Saturday Jan 16 2016 20:46:59 GMT-0500 (Eastern Standard Time)]

not only forces oil to be a more flexible fuel once again, but also pushes countries and companies to calculate their levels of profitability carefully due to price uncertainty. Energy and fuel efficiency have also put expectations on energy consumption in the USA to be either constant or comparable to their current levels (“US desperately needs a national energy policy,” n.d.).

3.5.2 Policy makers’ and observers’ perceptions of problems and solutions

Interviews, in Turkey and in the other case countries, showed that the global energy sector, as shown in the oil crises, have a solid influence on the interviewees since interviews were at a time of extreme fluctuation. The interviews in Turkey suggest, in accordance with the Term Structure Approach, how a problem such as a price shock may invite only palliative responses in the short term (Table 12 and 13 below). However, in the long-run, policy and infrastructure investments may reset the structural framework.

Table 12. Response to Question 10 “Prices historic Highs. Reasons and Consequences?”

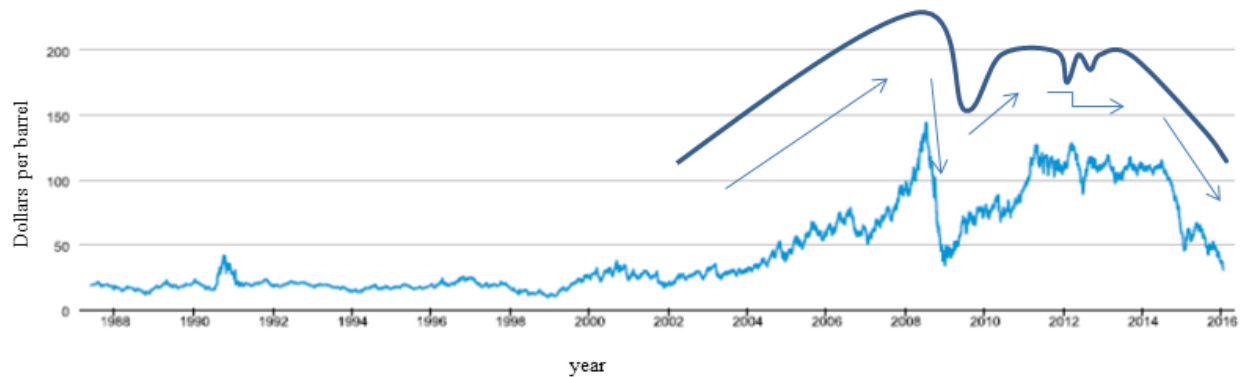
Question 10		Response by					
		TR	NL	FR	RUS	ITA	Total
Response	Many factors	2	5	2		1	10
	Supply demand	3	3	4			10
	Geopolitical	1		1			2
	Speculations	5	3	2			10
	Consequences	2		1			3
	Others	2		1	1		4

Table 13. Response to Question 11 “Prices Fall Reasons, Consequences?” in field interviews

Question 11	Response by					
	TR	NL	FR	RUS	ITA	Total
Supply/ demand	6	1	2	1	1	11
Speculations and other many factors	2	5	3			10
Consequences	4	2	1			7
Others	3	3	4			10

Regulation was at the onset of this research endeavor not considered as a factor that could be shaping policy. However, speculation has been cited as a major problem by many interviewees and a non-negligible portion of the interviewees mentioned the importance of regulation (13 times; details in Appendix 4). Institutions, including regulatory bodies have a role in implementing rules and regulations, but in the long-run, they also help identifying the economic, as well as potentially social, environmental and geopolitical needs to shape policies on energy security. The ongoing collaborations by the energy regulatory bodies at an international level may in future become forums for trust building and institutional collaboration according to the sectoral needs of the member institutions (many of whom face similar challenges and tend to exchange their experiences to have similar approaches in the event they would have to face comparable challenges³⁷).

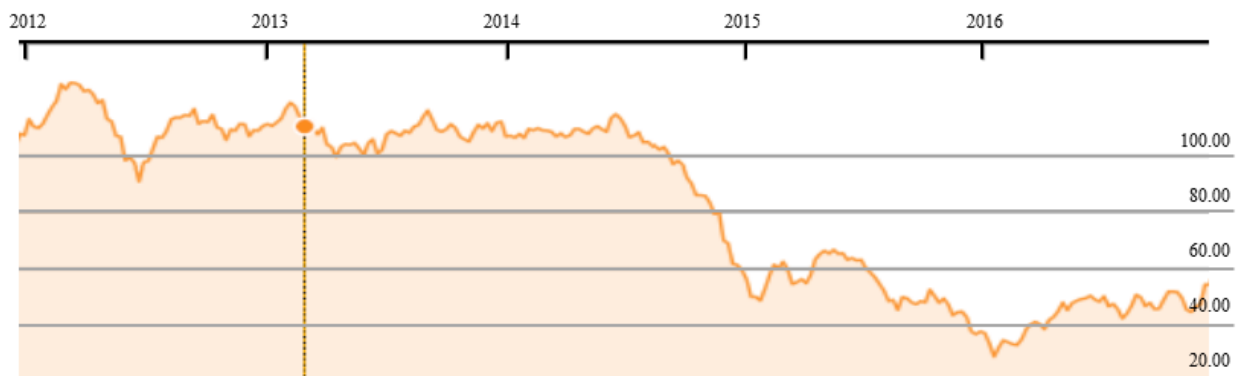
³⁷ One example of such practice is the University of Florida’s Public Utility Research Center and World Bank’s International Training Program on Utility Regulation and strategy. (<http://warrington.ufl.edu/centers/purc/training/itp.asp> accessed 2 January 2016 23:47 EST) Where apart from the training, ideas are exchanged and experiences are shared during an international forum.



Source: EIA- US DoE

Figure 6. Petroleum extreme volatility (EIA- US DoE)

From 2003 until 2016, there has been an **M** shaped movement of extreme volatility and fluctuations in the world oil prices. Prices were pushed up by events such as the Invasion of Iraq, hurricanes in the Gulf of Mexico, the Russia-Ukraine crises, The Fukushima disaster, the growth of Emerging Market economies, the Arab Spring. On the other hand, the Shale Revolution, increased investments on renewables, and technologies that allowed improvement in energy efficiencies as well as lower production costs, and finally the global recession affecting the non-OECD economies such as China, Russia and Brazil, all led to the eventual price decline in the Figure 11 (Bloomberg) depicted below.



Source: Bloomberg

Figure 7. Fall of petroleum prices (Bloomberg)

3.5.2.1 Short term responses (markets): seeking short term supply/solutions

Although, there was a seeming inaction in the financial markets, there were, however, some important energy policies seeking solutions. Turkey, as an energy importing country, was not concerned when prices were low. However, it is worth noting that the decision to implement a generous Feed-in-Tariff to renewables came in 2010, shortly after the 2008-2009 period of economic crisis as well as low oil prices. Renewable Energy Law in Turkey gave generous incentives (feed in tariffs between º7.3 and º13.3 per kWh.) to encourage energy production from renewables (“Turkish parliament approves renewable energy law - Invest in Turkey,” n.d.).

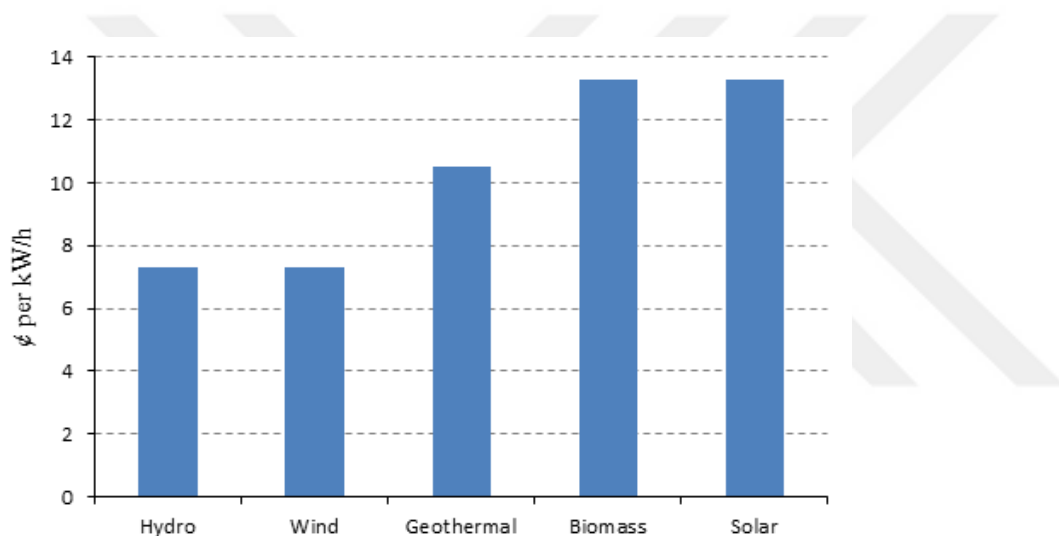


Figure 8. Feed-In Tariffs according to the renewable energy Law in 2010.

According to the law, a hydroelectric power plant and a wind farm will sell electricity at a cost of º7.3, while geothermal energy suppliers at º10.5, biomass and solar power are subsidized the most at a rate of º13.3 per kWh. This decision to strengthen domestic renewables may be considered as DMA. Furthermore it could be cited as perhaps one of the most important policies in the short-medium term following the exogenous shocks of the oil prices extreme fluctuation. It’s important to contemplate that this decision of feed in tariff was passed prior to the fallout in Fukushima.

Since its passage, the law has nurtured an existing interest in developing renewable energy in Turkey, as observed with the rise of non-hydro renewable energy production in the Turkish primary energy production mix. The first period of significant increase corresponds to the 5 years after the Russia/Ukraine gas crisis in 2005, with the increase from 2005 to 2010 being 0.8 MTOE

(from 0.1 to 0.8). However, since the ratification of the REFITs by the Turkish parliament, non-renewable hydro increased by 2 million tons of energy equivalent in 4 years; from 0.9 MTOE in 2010 to 2.9 in 2014, as illustrated by EIA data and demonstrated earlier in Table 4 (www.eia.gov , 2016). Thus, the effects of the REFITS are observable in this period of just 4 years immediately since the passage of the law. Furthermore, by the year 2013, just three years after passage of the law, the investments significantly increased, making non-hydro production rise from 0.9 MTOE in 2010 to 2.2 MTOE in 2013. Clearly, this demonstrates the operation of a relatively successful DMA in the short to medium term.

3.5.2.2 Long term responses (geopolitics): DMA/EGA (more observable).

In the long run, an important economic decision to create and develop further the energy spot market is essentially DMA (though seemingly a combination of both DMA and EGA). Energy Exchange Istanbul (EXIST/EPIAS) (“EPIAŞ | Enerji Piyasaları İşletme A.Ş.,” epias.com) is an energy day ahead stock market. A financial market is domestic but aims to attract foreign portfolio capital, thus both internal and external players to the market. Because the decision to have an energy futures market and spot market is not merely one created by the private sector but is essentially a political decision, the decision is a combination of politics and economics, thereby of markets and geopolitics. This would become not only a financial tool but also a price determining mechanism, instead of government deciding the price (intended to slowly replace PMUM). As such, this was perhaps the most significant tool, and subject to regulations of financial regulators such as The Capital Markets Board of Turkey, or SPK (“Sermaye Piyasası Kurulu,” spk.gov.tr), and the Banking Regulation and Supervision Agency, or BDDK (“Banking Regulation and Supervision Agency,” bddk.gov.tr). Both these policies by the government of Turkey are generally related to energy security. However they are not necessarily evident foreign policy tools. It’s revealed that EPIAS’ creation was important visibly for the purpose of supporting the goal of Turkey becoming a regional energy trade center. This purpose (or mission) is only confirmed due to statements on EPIAS’ website (“Mission and Vision | EPIAŞ,” n.d.). This is why the more important decision of the nuclear power plant, which is another important goal for Turkey, becomes all the more significant. This important development was realized around eight years after

the World Economic Crisis that started in 2008 and created turbulence in global energy and financial markets by 2009. As discussed previously, the necessary legal background became only possible in 2013, and EPIAS was only created in 2015. Therefore, even though EPIAS is a very significant example of long term DMA, and the world economic crisis was an all too recent memory in Turkish policy makers, the decision was implemented too late to be called a direct response to an exogenous shock. Though not direct, inevitably it was in the institutional memory of policy makers when being developed, which is why it was discussed in this research.

3.6. The 2011 Fukushima nuclear meltdown in Japan

3.6.1 Crisis background

In 2011 March, an earthquake and subsequent tsunami in Japan caused a nuclear fallout at the Fukushima-Daiichi nuclear reactor. Because of insufficient cooling, nuclear meltdown occurred and radioactive materials were released (Lipscy, Kushida, & Incerti, 2013). This was one of the greatest nuclear disasters in history. This disaster started a questioning around the world concerning the safety and future of nuclear power technology. Pre-Fukushima expectations about the future of nuclear energy pointed to a nuclear renaissance. After the incident, however, nuclear energy entered an unexpected period of uncertainty (Göktepe, 2012). Even though the results of Fukushima indicate a very serious, profound and lengthy process of re-examination of nuclear power, it sent different messages to different countries. While some countries opted for postponing or cancelling new nuclear plants, other countries have strengthened the security and safety of the existing plants. The ‘determination’ to benefit from nuclear electricity is observed particularly in the countries newly entering/or preparing to enter the nuclear power technology, including Turkey (Dirioz & Reimold, 2014). In fact, Turkey continued investments and broke ground in April 2015 with the Russian Rosatom on Akkuyu (“Akkuyu’da ilk temel törenle atıldı, Akkuyu Nükleer A.Ş.,” n.d.).

Turkey is a country that was directly impacted by the Chernobyl fallout. Older generations remember the controversies about that accident and the suspected contaminations of tea harvest

by radiation during the 1980's. For the rest of the world, Fukushima had the effect of halting the apparent nuclear renaissance. The most radical response was from Germany with the announcement in May 2011 that existing nuclear power plants would be completely phased out by 2022 ("Nuclear Power in Germany - World Nuclear Association," n.d.).

On the other hand, countries that decided to proceed, such as China, the United Arab Emirates, Egypt, and Turkey, were less affected by the disaster. They have continued to pursue civilian nuclear energy programs even after March 2011. These countries conceive this not only as a matter of national prestige but also in terms of the desire to have reliable baseload energy supply available domestically. Few are considering the movement toward decentralized electricity generation that many US states and EU countries are currently debating and trying to implement as a more prestigious technological step forward. In Turkey, there remains some public skepticism. For instance, important mainstream journalists have called the project both high risk and expensive (Benmayor, 2012a). However, the plans for both Akkuyu (Russia) and Sinop (Japan and France) are actively being pursued, in addition to a possible third nuclear power plant. Furthermore, an agreement on civilian nuclear energy cooperating was signed between Turkey and China in 2012, a year after Fukushima, and recently ratified (agreement signed in 2012 but ratified in September 2016) (Munyar, 2016).

The 2017 Referendum in Turkey, which provides more executive powers to the President, can be interpreted by President Erdogan and the ruling government as a 'popular' mandate to act with more freedom on energy issues, including on nuclear energy. And decision-making would be a lot swifter according to the pro-government news reports from TRT World; "[...] political stability that will arise when the head of government and the head of state are channeled through one point of authority overcoming the conflict of power in the current system" (Atas, Al Burai, & Mehmet, 2017). Hence, the swifter decision-making would also likely include matters of critical importance such as nuclear energy.

3.6.2 Policy makers' and observers' perceptions of problems and solutions

Government and elites’ motivation for ‘making responses for maintaining energy security’ both internally and externally with such an investment is an important reason for the project. Another is the matter of national prestige in developing nuclear energy (Dirioz & Reimold, 2014). This is reinforcing the notion of how geopolitics may set the parameters within which markets operate, since the decision to invest on a nuclear power plant in another country is hardly just commercial but very political indeed. This was even seen as a justification by the Turkish Ministry of Energy as to why intergovernmental agreement was necessary instead of the tender process. The argument was that tendering didn’t work.³⁸ However, it is interesting to note that the details on the reasons why it didn’t work were not at all mentioned. Interviews reflected the seemingly unopposed attitude toward nuclear energy. The semi-structured interview had asked a very open ended question about what nuclear energy is, especially after Fukushima. Thus the interviewees were clearly reminded about the accident to be taken into context. Yet the seemingly unopposed responses dominated.

Table 14. Response to Question 5 “Nuclear Energy is [good] ?” in field interviews

Question 5	Response by					Total
	TR	NL	FR	RUS	ITA	
Response	Support	5	1	8	1	15
	Mildly Support	6	5	2	1	
	Mildly Object	1	1			2
	Object			1		1
	Undecided		4			4
	No Answers	1	1			2

As a country that is aspiring to have nuclear energy, many of the respondents clearly expressed support for nuclear energy. Only one of the interviewees objected and two preferred not to answer

³⁸ Turkey’s official presentation on the status of the Akkuyu power plant to the International Atomic Energy Agency: https://www.iaea.org/NuclearPower/Downloadable/Meetings/2012/2012-06-18-20-TM-Vienna/11.Review_of_Akkuyu_NPP_after_Fukushima.pdf

the question. The level of support was comparable to that in France. Again, this was not that much different from even a country like the Netherlands, where a stronger objection was expected. For the case of the Turkish respondents, because of the local public strongly objecting to the project, and also because there were many academics and non-government affiliated interviewees, the expectation was that there would be more objections to the project, especially considering that the Fukushima fallout had only recently occurred, and all of the interviewed elites in Turkey were old enough to personally remember the negative effects of the Chernobyl disaster in the 1980's. Though support was anticipated, such a strong degree of support was not expected. One common theme in many of the in-person interviews was that it seemed to be a “necessity” because of energy security considerations. If that is the case, then elites’ being able to make macroeconomic and geopolitical analysis and having long term considerations would explain such a tendency in favor.

3.6.2.1 Short term responses (markets): seeking short term supply/solutions ex; LNG

Turkey had already initiated a comprehensive feed-in tariff and a renewable energy law prior to Fukushima. Hence, the research did not observe or identify a significant short term market or economic response to Fukushima. Perhaps one reason was the geographic distance to Japan. In other words, Japan’s nuclear output decrease did not have any major impact on Turkey’s energy market and thus to its energy security. By contrast, a decrease in oil output is more likely to affect prices in spite of geographic distances. For example, Saudi Arabia is far from China, but KSA decisions to raise or cut output affect prices paid in China or Japan.

3.6.2.2 Long term responses (geopolitics): DMA/EGA (more observable).

This investment is a very interesting example where both DMA and EGA are combined. On one hand the investment is in Turkey, but on the other hand the investment is a product of an intergovernmental agreement. This remains true not only for the case of Akkuyu, but also for the possibly second power plant envisaged in Sinop, and an agreement for nuclear cooperation with China, potentially for a third nuclear plant. Unlike the UAE, where a Korean consortium is

building the nuclear plants, Turkey is also “balancing” between various countries in its aspiration to develop nuclear energy. Also in domestic politics (IB) the government’s decision to further develop renewables and domestic sources of energy are types of “structural modifiers” that involve to a certain degree foreign investors and thus some EGA as well. Still, unlike the intergovernmental agreements signed on nuclear energy, these Renewables are not strictly energy security *per se* but rather energy policy in general.

One of the most astounding findings both with the interviews and the research was the seeming support, or at least lack of opposition. Interestingly, the decision to continue with the Akkuyu power plant in spite of the Fukushima disaster was actually supported by the elite circles in Turkey. Elites in France and Netherlands were also seemingly unopposed to nuclear power. This is an important and interesting finding and a contribution that this research offers. Some may consider Turkey as an “outlier” compared to the other EU countries due to its geographic proximity to the Middle East and the strategic contexts and national prestige that seem to be driving nuclear investments in MENA countries such as Iran, UAE, possibly Saudi Arabia, and Egypt. However, the unopposed position not only appeared in France (as expected) but also in the Netherlands. The major difference was that neither France nor the Netherlands, unlike Turkey, had initiated new nuclear energy investments in the post-Fukushima period.

Turkey’s current government also sees nuclear energy as an indispensable means of bolstering baseload energy supply and thus strengthening energy security. Nuclear technology transfer among nations also continues to belong to the domain of bilateral intergovernmental agreements between nations rather than contracts between wholly private companies operating in the free market. For instance, an intergovernmental agreement between Turkey and Japan was signed regarding the Sinop nuclear power plant on October 2013 (Bilgin, 2015). Turkey and Russia also signed and ratified similar agreement on Akkuyu nuclear in 2010 and Akkuyu nuclear plant construction began in April 2015 (Bilgin, 2015). As such, the issue of nuclear industry cannot simply be treated exclusively according to market mechanisms. It requires long term geopolitical understanding.

The debate has also not really taken place at an optimal level. A summary of the outlook of the government in Turkey as to why there is a decision to proceed with Akkuyu can be understood from the Ambassador Gul Göktepe's manuscript submitted to the World Energy Council:

While some countries have opted for postponing or cancelling new nuclear plants or moratoriums, most countries have been determined to continue while strengthening the security of the existing plants and have started efforts to this end. The importance of nuclear power alternative in Turkey's energy-environment-economy triad is being underlined and it is being assessed that the trends and works on enhancing nuclear security in the world since Fukushima, will have positive repercussions for Turkey at the beginning of its nuclear power program (Göktepe & Turkish Delegation at UN office in Vienna, September 2012, Accessed: 12/12/2016).³⁹

Turkey's need to import 90% of its oil and natural gas is indeed a strong enough motivation for developing a nuclear power plant. Furthermore, the understanding is that there are lessons to be learned from Fukushima about applying more severe stress tests to make facilities better prepared. The government took the decision of proceeding, in spite of Fukushima, with the Russian company Rosatom in Akkuyu, and in the building the second alternative plant in Sinop by Japan's TEPCO (which, ironically, operated Fukushima-Daiichi).

It is understandable that Turkey wants to "balance" the construction of different nuclear power plants within Turkey among different national consortiums; therefore, it is trying to achieve EGA. Turkey with nuclear energy is also trying to achieve 'internal' adjustments (DMA) by developing nuclear energy as a base-load contribution to the energy mix. The government, in deciding to proceed with nuclear energy, may in the future also contract with experienced companies such as Nextera Energy, Duke Energy, GE-Hitachi, Areva, Siemens, and E.ON, or even KEPCO-Hyundai (using established Westinghouse systems).

³⁹ "Post-Fukushima global energy politics and nuclear power" ("Fukushima Sonrası Dünya Enerji Politikaları ve Nükleer Güç") by B. Gül Göktepe, Turkish Permanent Delegation at the United Nations Office in Vienna (Birleşmiş Milletler Viyana Ofisi Nezdinde Türkiye Daimi Temsilciliği), September 2012. <http://www.dektmk.org.tr/upresimler/enerjikongresi12/67-GulGoktepe.pdf>

The interview process began in Turkey, and lasted for less than 12 months. The final interviews were conducted in November 2012 in Paris. The controversy over Akkuyu nuclear had not yet reached the current levels, nor was there considerable work on that project. Also, at that time, the Arab Spring had more influence on the gradual rise of oil prices. Turkey's domestic politics had not yet gone through a series of critical local and national elections. And the main project at the time was thought to be the NABUCCO pipeline, not the TANAP project. Also, the crisis between Russia and the Ukraine had not erupted into a conflict involving separatists in Ukraine, nor was there such a refugee influx to Turkey. The interviewees in Turkey were relatively responsive, and as anticipated at the onset of the research, all interviewees from the government insisted on anonymity. Very few agreed to be recorded. Those who did were academics. Also, the interviewees were chosen in such a way as to balance the pro-government and more independent and sometimes opposition points of view. Otherwise the entire dissertation would have been a repetition of government press releases. Private companies were willing to have interviews in Turkey, on the condition of remaining anonymous. Responses on nuclear energy were slightly different than expectations, in the sense that there was more support than anticipated. But the overall responses were not significantly different from the elites in France and the Netherlands.

3.7 Conclusions: Term structures matter because of in short term market adjustment, and long term structural adjustments (geopolitics).

It could be summarized that like many countries, Turkey also tried to have palliative responses in the short term when facing exogenous shocks, but in the long term tried to make responses that would reduce geopolitical and political-economic vulnerabilities. Below is a summary of the above described reactions by Turkey to the 4 exogenous shocks.

Table 15. Case countries' reactions to Exogenous Shocks as DMA and/or EGA

DMA = Domestic (i.e. Internal) Market Adjustments EGA =External Geopolitical Adjustments.

	E.S. 1)	E.S. 2)	E.S. 3)	E.S. 4)
	Invasion of Iraq (including prior diplomatic escalation at UNSC and subsequent oil price hike).	Russia-Ukraine Gas Crisis 2005/2006	Global Economic Crisis 2009 and extreme Oil Price Fluctuation	Fukushima Nuclear Disaster 2011
	DMA & EGA with lag :	Weak initial response later DMA : wind energy	Moderate DMA: REFITS after 2009 long term DMA: EPIAS	DMA & EGA Nuclear; Akkuyu, Sinop and China nuclear cooperation
TURKEY	alternative supply, Russia and KRG ⁴⁰	EGA: TANAP + South Stream ⁴¹		long term DMA: Indigenous energy

The main case of Turkey suggests how the ‘Term Structure’ Approach to Energy Security is useful to understand how governments respond to exogenous shocks. Looking at the Time Horizon and Type of Adjustment table, Turkey’s DMA and EGA responses are good illustrations of the Term Structure Approach. Short term measures such as REFITS and LNG purchases have indeed provided palliative measures to ease the immediate political economic sensitivities. For the case of REFITS, the spike in non-hydro renewable energy production between end of 2010 and end of 2013 (Table 4) is truly remarkable, and both hydro and non-hydro renewables in combination are

⁴⁰ DMA and EGA of mostly Political, Developing BTC and TANAP as well as new deals with RUSSIA., searching new sources of supply and developing relationship with Russia (except the 2015 Jet crisis)

⁴¹ EGA in the sense Turkish-Russian cooperation significantly increased since 2006. Akkuyu nuclear energy with Rosatom. But TR also sought alternatives (ex:BTC operational, Nabucco attempt, and TANAP)

comparable (equal to or greater than) to coal production, an historical staple of Turkey's domestic energy supply. However, their production levels were not nearly sufficient, as only around 10% of the total energy consumption in Turkey in 2014 (Table 4) could be supplied by these domestic hydro and non-hydro renewables. On the other hand, long term EGA developments such as Akkuyu Nuclear, development of relations with KRG in Northern Iraq, particularly the Turkish company (General Energy) developing the Taq-Taq oil field, and development of new pipelines such as TANAP are all measures attempting to remedy vulnerabilities in the long-run and have greater capacity as mega-projects to reduce vulnerabilities in energy security. Hence, for the case of Turkey, when compared to the key developments of short term and long term EGA and DMA, as indicated in Table 1 earlier, long term EGA, which in the visible future would provide more significant supply and thus set a more robust framework within which domestic markets such as EPIAS/EXIST would operate.

Term Structure matters because of the need to understand short term market response (or rather the inability to adjust), and long term efforts of structural balancing geopolitically. Intergovernmental Agreements on nuclear energy are acts of both internal and external balancing (and therefore both DMA and EGA) because of the "strategic" nature of these investments, involving cooperation at the highest level between two countries ("Akkuyu nuclear power plant turns into strategic investment," n.d.). Besides nuclear, the same notion is valid for intergovernmental agreements on infrastructure projects such as pipelines. Such investments have clear connotations for future capacities. Last but not least, infrastructures such as pipelines, storage, LNG terminals, etc., are necessary for the market to foster and for Turkey to become an economic and physical hub. These infrastructural investments are not automatically delivered by market forces, and therefore they require a strategic vision in the long-run on behalf of the government. Furthermore, Turkey is concurrently attempting to also become a financial hub for energy markets. In all these respects, the Ministry of Energy's presenting its "National Energy and Mining Policy" at a program open to the media in April 2017 is a demonstration of a strategic guidance provided by the government.

Turkey and Azerbaijan through the earlier BTC project and later TANAP project, are engaged in a novel type of alliance formation. Israel and Cyprus (Greek Cypriot Administration in Southern part of the island) have also entered in a form of 'alliance' through energy for some time, by using the

Eastern Mediterranean as a geo-strategic arena of cooperation.⁴² Forged alliances are acts of “balancing” because they affect system-level modification of power balances (Schaub, 2005; Taliaferro, 2001, 2006).

The main case study country, Turkey is a case where the Term Structure Approach is a useful analytical tool kit to understand the different EGA and DMA actions in the long and short terms. Overall, the Turkish case suggests that in the face of exogenous shocks, limited palliative DMA measures were in place, and that to reduce vulnerabilities, longer-term EGA policies are more observable. The next two chapters would assess the cases of the French and Dutch governments over the same exogenous shocks.

⁴² The Issue of Israel-Cyprus (Greek Cypriot Administration)-Greece “Strategic Alliance” is discussed in the special issue of the journal *Regional Science Inquiry*, The Journal of the Hellenic Association of Regional Scientists, Vol.8 No.2. June 2016. (“RSI June 2016 (Greece),” 2016) The article by Mazis and Sotiropoulos discusses the role of energy geopolitics as a factor in Greek-Israeli relations, and discuss also within the context of alliance formation. (Mazis I.T., Sotiropoulos I.P., *Regional Science Inquiry*, Vol. VIII, (2), Special Issue 2016, pp. 27-44) Also in the same issue, (Voskopoulos G., *Regional Science Inquiry*, Vol. VIII, (2), Special Issue 2016, pp. 11-18) Voskopoulos mentions spatial and time factors in conflict management and negotiations. Which has intertemporal similarities but is different from the “term structure approach” (or a timeframe approach) because Voskopoulos references to timing and time in conflict management and negotiation (See Borisoff Deborah & Victor A. David (1997), *Conflict Management: a communication skills approach*, Pearson), whereas this research’s time-frame in its approach distinguishes geopolitical and market events as short term and long term factors affecting the capacity of policy to respond to vulnerabilities, and is not necessarily in the same intent and scope of ‘timing’ used in conflict management and negotiation.

CHAPTER 4

RESPONSES OF FRENCH GOVERNMENTS TO EXOGENOUS SHOCKS

4.1 Background on energy security in France.

France is the second most populated country amongst the three case study countries, and is the biggest in terms of annual GDP. In 2015, France was ranked by the World Bank as the 6th largest economy in the World in terms of current GDP (World Development Indicators database, World Bank, 2015):

Table 16. World Development Indicator; Raking Economy in millions of US Dollars of 2015
Gross Domestic Product (World Bank Data 2015, Access 11 October 2016)

Raking	country	Millions US dollars
1	United States	17 946 996
2	China	17 946 996
3	Japan	4 123 258
4	Germany	3 355 772
5	United Kingdom	2 848755
6	France	2 421 682
17	Netherlands	752 547
18	Turkey	718 221

Furthermore, France and the Netherlands were among the founding members of the European Union, and are also members of NATO, OECD, and the Council of Europe. France and Turkey are members of G20. Geographically and politically, France is at the heart of Continental/Western Europe and within the Eurozone is between the relatively poorer southern countries and the wealthier northern ones. France's foreign policy has been marked, even during the Cold War, as one where there was a 'relative distance' to Britain and the United States, even within the North Atlantic Alliance. In 1966, as a reaction to the United States, France withdrew from the military command of NATO to preserve France's 'independence' in world politics. NATO headquarters was subsequently relocated from Paris to Brussels (Cody, 2009 : 43). It was only as recently as 2009 when France rejoined the integrated military structure of NATO. Hence, French interviewees were expected from the onset of this research to have a strong sense of the role of the French State on energy, and then also attach greater importance to the European Union.

France is one of the most important sovereign nations in the world and within the EU members, in terms of energy consumption, and electricity generation, and its energy policies, have served to a certain extent, arguably as a model or benchmark during the Paris COP21 meetings in December 2015 (IEA, 2017 : 9). Technically, France is referred to as an EU locomotive, and in many ways still prioritizing the "Europeanization" of energy security by promoting interconnection and a strong Energy Union within the EU. By contrast, France has at times been referred to as a "black Sheep" in the EU, and especially due to the strong role the French Government plays in the energy market. Even in French politics and presidential election debates, the issue of energy security has been of high importance (Meritet, 2007).

In understanding the French and Dutch context slightly different from Turkey is the importance of EU membership. As explained in the section 4.2.2.2 below, in the long term, France and Germany became major advocates of the 'Europeanization' of security in the sense of opposing American unilateralism, and developing the capabilities through the EU and European NATO members to conduct peace operations. This development of 'external' adjustment mechanisms, similar to consolidating alliance formation are a key component referred in this research as 'Europeanization' of security and considered EGA type measures. While they include military capabilities, they also

include development of EU-wide interconnectivity and an Energy Union. Measures such as further development the European Union's capabilities in maintaining European foreign and security are among the measures of 'Europeanization' of security. European countries such as France and Germany have since the 2003 invasion of Iraq further developed their collective defense capabilities relying more on the EU and the European command of NATO, and relatively less on US supported umbrella of NATO. On emerging security issues such a peace keeping, combating piracy, as well as energy security, this development of 'external' collective security as part of this general trend of 'Europeanization' of security.

Within the EU, only Germany has a significantly higher GDP than France.⁴³ Yet the French economy is vulnerable because it depends overwhelmingly on nuclear power and imported fuels. French domestic energy production can provide a very limited help for this economy to remain stable, thus as the 12th largest oil consumer in the world (2012 values) France feels the need to secure its energy inflow, and diversifies the set of imports it relies on, particularly in oil and gas. Of these two particular commodities, 'oil used' represents one-third of France's total primary energy consumption. Marseille, Le Havre, and Saint-Nazaire ports are the reaching points of crude oil that is to be used in France. It also uses South European Pipeline System (SPSE) for this end. Although France is depending on imports for crude oil, it has a high capacity to refine oil, but its capacity has decreased because of refinery closures. Nonetheless, France has the capacity to refine 1.5 million barrels per day. This capacity makes France the fifth best in this field within Europe and Eurasia. Corporations, such as Total SA (or simply Total), play an important role in building this capacity.

Domestic natural gas production, on the other hand, is very limited, and French government restricts the use of hydraulic fracturing in extracting shale oil and gas. Natural gas imports depend on a variety of different states from different regions, such states include the Netherlands, Norway, Russia, Algeria, Nigeria, Qatar and Egypt. The imported gas helps to supply the demand of power and industrial sectors, besides residential sector gas demand. Efficiency gains help to decrease

⁴³ The United Kingdom's GDP is comparable to France though (Table 16) 2015 World Bank Data suggests the UK having a higher nominal GDP, however in 2016 the UK, following the Leave votes obtaining the majority in the BREXIT referendum, is expected to have its government follow through with the decision and leave the EU.

residential demand. Nuclear energy ensures 83% of France's electricity generation, and thanks to this capacity France is not only an exporter of electricity, but also an exporter of nuclear reactor technology. Its technological know-how in the nuclear energy sector helped France to innovate and reprocess used nuclear fuel. This technique helps France to deal better with waste disposal. The use of innovative technologies reflects harmony with France's *Grenelle de l'Environnement* program, which sets ambitious targets, particularly in the buildings and transport sectors. Like in these sectors, France tries to implement environment-sensitive policies in the energy sector (IEA, Energy Policies of IEA countries, France 2009 Review, 2009 : 8). Nuclear Safety Authority that is established for this purpose drew a comprehensive framework for managing all kinds of radioactive waste and materials. France also uses environment-sensitive renewable sources. It is the second-largest biofuels producer in Europe after Germany. However, these developments still hardly overcome all of the environmental challenges France faces. Emissions in the transport and buildings sectors increased from 1990 to 2008. However, the updated data for 2014, demonstrated that by 2014, the total primary energy consumption of France (in quadrillion Btu) had significantly dropped to 10.16914 (EIA, n.d.).⁴⁴

Table 17. Total Primary Energy Consumption (in Quadrillion Btu)

([eia.http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=44&pid=44&aid=2](http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=44&pid=44&aid=2), April 2017)

	2008	2009	2010	2011	2012	2014
France	11.31583	10.75269	11.02566	10.8353	10.69425	10.16914*
World	485.7181	480.0048	508.1199	520.2721	524.0758	

*update retrieved 19 April 2017.

⁴⁴ Source: U.S. Energy Information Administration - EIA, International Data, France (<https://www.eia.gov/beta/international/data/browser/index.cfm/?c=0000000000000004&ct=0&vs=INTL.44-1-FRA-QBTU.A&vo=0&v=H&start=2002&end=2014>) Access: Wed Apr 19 2017 11:05:59 GMT-0400 (Eastern Daylight Time)

Table 18. Consumption and Production of energy types in France in MTOE (EIA)

		Oil	Coal	Gas	Nuke	Hydro&	Renewables
PRODUCTION (MTOE)	2003		1.3		99.8	13.5	0.9
	2005		0.2		102.4	11.8	1.1
	2010		0.1		96.9	14.3	3.4
	2013				95.9	15.5	5.9
CONSUMPTION (MTOE)	2003	93.1	14.4	38.9	99.8	13.5	0.9
	2005	93.1	14.3	40.3	102.4	11.8	1.1
	2010	84.5	12.1	42.2	96.9	14.3	3.4
	2013	80.5	12.2	38.6	95.9	15.5	5.9

Source: EIA

France, having such a large industrial economy, with limited domestic resources available for energy, relies overwhelmingly on electricity generated by nuclear power (“France expands nuclear power plants despite Fukushima,” n.d.). Still, France is the country with the 15th highest oil consumption in the world (“The World Factbook — Central Intelligence Agency,” n.d.). Yet in spite of such needs for energy resources, the French government has restricted the use of hydraulic fracturing that proved to be a successful means in North America to extract shale oil and gas resources (EIA, 2016a). Under such conditions, France continues to rely on natural gas through pipelines coming from the Netherlands, Russia and Norway. Additional natural gas in the form of liquefied natural gas (LNG) is in most part imported from Algeria, Nigeria, Qatar and Egypt. The majority of the gas coming to France is of Norwegian and Russian origin, but there are alternatives available through interconnections. Through the interconnected grids in Spain and Italy, France also has gas available from the Trans-Mediterranean pipeline (built from late 1970s to 1980s), as well as the later built Maghreb Pipeline (Operational in 1996) (Victor, Jaffe, & Hayes, 2006 : 41).

However, both projects involve a vast number of transit countries in the process of transporting gas from Algeria through pipelines. The route from Algeria is either through Morocco and Spain to the West, or through Tunisia and Italy to the East. Furthermore, through Italy, the Southern Gas Corridor value chain (TAP, TANAP, and SCP) would also become an available option for France. France, inevitably, relies on a cohesion of European and Mediterranean energy cooperation. Interconnectivity of electricity and natural gas grids in the European markets is thus essential for France. Furthermore, there's considerable need to rely on potential improvements in energy efficiency to continue consumption at steady levels.

Even though natural gas constitutes an important and growing share of the French energy mix, in the meantime, nuclear power remains to constitute the backbone of the French energy need. France, in the eyes environmentalist groups, is rather notorious for intensive use of nuclear energy to power over three quarters of its electricity. Oil (petroleum) represents about a third of France's energy consumption (EIA France Country Profile <http://www.eia.gov/beta/international/country.cfm?iso=FRA>). The extensive use of nuclear energy benefited French companies to have vast know-how in the field. But since the doubling of costs and construction time of the Flamanville nuclear power plant, even in France, the future of nuclear power was in question (Soleymieux, 2015). The oldest power plant in France has been decommissioned, and the public is more supportive of growing share of renewables in the French energy mix. But nuclear power is considered as necessary for the base-load energy needs.

Although, France is a resource-poor country in terms of energy, it hosts some of the most important energy companies in the world (many of whom have headquarters in the "La Defense" area in Paris). Total, EDF, Areva, and Engie are just some of the main French energy enterprises. This has allowed France a tremendous know-how, human resources, technical as well as managerial capabilities (human capital) in the field of energy. Because France relies on imported oil and gas, unsurprisingly both Total and ENGIE⁴⁵ are respectively among the largest Oil and Gas companies in the world. While EDF owns and operates nuclear power plants, Areva is a company

⁴⁵ After the completion of the field research phase of this dissertation, Gaz de France Suez became Engie.

specialized in delivering industrial and power plant facilities, including construction of nuclear power plants.

Total is today one of the largest companies in France as well as being one of the largest oil and gas companies in the world.⁴⁶ Total became a “national champion” after becoming a *Super Majeur* (Super Major) in the late 1990’s; a time when there were also other important mergers and acquisitions between major oil companies such as the Exxon-Mobile merger. From 1999-2000 there was the merger between Total CFP, PetroFina, and Elf Aquitaine, the three main French oil companies. This merger and acquisition, which was approved by the French government in order to consolidate and create the giant company Total-Fina-Elf, (today simply known as Total), proved to be coincidentally a very timely and convenient action through the years 2000’s and 2010’s. Since the merger, Total established itself as one of the largest oil and gas companies in the World, and in that respect, perhaps similar to BP, it is itself a similar actor/player in global energy security. Furthermore, Total operates five of the nine crude oil refineries in France, which corresponds to about half of France’s crude oil capacity (EIA, 2016b).

Yet, today, Total also prides itself for having made a strategic investment on solar energy, in line with the growing trend of solar and renewables over the last decade. As of 31 December 2013, Total has acquired 65% of an American solar panel manufacturer, installer, and solution provider company called SunPower (“SunPower Press Release / Newsroom,” May 2013).⁴⁷ In addition to also developing the natural gas operations, and having a strong portfolio of solar energy, Total strategically sees itself as an “energy company” rather than merely an oil company.

France’s position as a ‘Black Sheep’ and cutting unilateral deals at the expense of EU solidarity could be seen perhaps through Total’s involvement in Russia (Nilsson & Filimonova, 2013; Orttung, Perovic, Pleines, & Schröder, 2008). Although the actions of a private company making

⁴⁶ Originally created in 1924 as the “Compagnie Française des Petroles” (CFP) namely the French Petroleum Company. From 1985 to 1991 the company was traded in the stock market as Total-CFP.: Total Website <http://www.Total.com/fr/profil-du-groupe/vue-densemble/nous-sommes-un-acteur-majeur-de-lenergie-depuis-pres-dun-siecle> Accessed 20 January, 2016 20:17 GMT+2

⁴⁷ Percentage was available in the Total company website when retrieved in January 2016 : <http://www.Total.com/fr/profil-du-groupe/une-strategie-de-croissance-durable-pour-repondre-aux-defis-energetiques> Accessed 21 January 2016 at 9:38 am GMT+2

‘business’ deals in Russia may not automatically qualify as EGA, the rise in involvement since 2006 and the need for high level contacts to make deals with Russia indeed qualify such actions as EGA for the purposes of this study. Furthermore, Total as a supermajor, resembles in many aspects the NECs, although its vast operations in different geographical settings still classifies them as MNEC for this research.

In 2014, Total’s CEO Christophe de Margerie and other top executives died in an airplane accident in Moscow (Gauthier-Villars, 2014). Furthermore, another shock was the renewed crisis between Russia and Ukraine leading to a sanctions regime imposed upon Russia, which resulted in Total withdrawing from its projects in Russia, such as from the Shtokman project in 2015 (The Economic Times, 24 June 2015). Total, today faces the challenge of becoming an overall multinational energy company, as the prices of oil and natural gas are reaching their lowest levels for over a decade. Furthermore, the decision to withdraw from Russia, however, is an interesting one that would be debated in future research to understand the motivating factors for the decision to withdraw, and if it was a decision that would be regretted. In spite of Total SA’s withdrawal from the Shtokman project in 2015, Engie, along with Royal Dutch Shell, will be amongst the main partners financing Gazprom for the Nord Stream 2 project (Foy & Toplensky, 2017; Peker, 2017). The Sthokman project was an important source in eventually feeding Nord Stream 2, and it’s also an interesting comparison to the Southern Gas Corridor value chain by SOCAR.

Another major French energy giant was traditionally in the field of Natural Gas, which is ENGIE.⁴⁸ ENGIE aims to make the transition to a more sustainable energy company and not just one associated with natural gas (“French gas giant GDF Suez changes name to Engie,” 2015). In that respect, it is a similar strategy to that of Total. But unlike Total, ENGIE also is more actively involved in the electricity market. And depending on the criteria, it is perhaps one of the largest energy companies in the world, employing over 150,000 people. Also unlike Total, one of the reasons for the name change is to break from the association in the consumers’ mind from its past as the state monopoly. In the process, the company drops the water and environment company

⁴⁸ Gaz de France Suez (GDF Suez) was created in 1946 immediately after the Second World War. GDF rebranded its name as ENGIE since the middle of 2015 “GDF SUEZ IS NOW ENGIE” (“GDF SUEZ IS NOW ENGIE” (<http://www.engie.com/en/group/history-engie-group/>)

Suez that had built the Suez Canal in the 19th century. In spite of the change of image, the French government still owns an influential one third of the company with the possibility of acquiring double voting rights (“French gas giant GDF Suez changes name to Engie,” 2015).

A third company that was originally a sister company of GDF is the world’s biggest electricity generator, Electricité de France (EDF). Also created after the Second World War in 1946, EDF today is of global significance because it is the monopolistic owner and operator of the nuclear power plants in France. With over 38.5 million customers and 72.9 billion euros in annual revenue, it is also the number one power grid operator in Europe with over 105,000 kilometers of power lines. And finally it is the world’s largest nuclear operator (“EDF at a glance,” n.d.). For this reason, it is 85% owned by the French Government. Because of the nuclear portfolio being so extensive in EDF’s power generation and France having such high dependence on nuclear energy, it is a leading company in terms of human capital with technical know-how, research and development as well as engineering skills essential for nuclear power (“EDF en bref,” n.d.).

A fourth and very important French energy company would be Areva. Unlike EDF, which owns, operates the nuclear plants and the grid, Areva is specialized as a service provider at the construction and project phase of special industrial and energy facilities, such as nuclear energy. For instance, it is also involved in special contracts such as Uranium enrichment, not only in France, but also in the United States and all over the world (AREVA, Press Release January 19, 2016). Such contracts require a company that is highly skilled and has the necessary technical expertise. As such, Areva is one of the few companies in the world that possesses the capacity and experience to provide specific and needed services to the nuclear industry.

Though the four companies mentioned above are only some of the energy companies, they are the main ones and are the globally active corporations that have impacts potentially for the governments of France in maintaining energy security. Though EDF is the state-owned enterprise among the four, the French government is also rather influential in ENGIE. As for Total and AREVA, although they are private and multinational companies, they are still France’s “national champions” in the fields they operate. And all four have their corporate headquarters in La Defense

district of Paris (which was visited on several occasions for the purpose of this research, and the headquarters were at walking distance from one another).

Table 19. SWOT Analysis for France

STRENGTHS	WEAKNESSES
• Experience past and ongoing major nuclear energy projects. Vast technology and know-how on the topic. • Home of TOTAL, EDF, Areva, and ENGIE (former GDF Suez). • Strong Industrial Economy, with technologies on natural gas, petroleum exploration, automotive industry, etc. • Paris as one of the most important global metropolitan areas, with many international institutions, headquarters of IEA, OECD, UNESCO, etc. • Strong Domestic Market, Second largest economy in the EU	• Over-dependent on nuclear energy for electricity generation. • Limited domestic energy production capacity other than nuclear. • Weak internal political leadership since the end of Chirac's presidency (neither Sarkozy nor Holland were able to project a strong legacy, which led the rise of Marine LePen and the extreme right). Little-known candidate Emmanuel Macron was able to get most votes in the first round in April 2017 without the support of any of the major political parties, and won against Marine LePen in the second round of the presidential elections in May 2017.
OPPORTUNITIES	THREATS
• Continued preeminence in civilian nuclear energy development ts and technology. • Opportunities in developing renewable in foreign assistance and international development • Special Relationship both linguistically and economically in French-Speaking developing countries, particularly in Africa. • Continuation of key role in EU, and deepening of the EU Energy Union.	• Overdependence on nuclear and risks of security and safety associated with nuclear energy (Flamanville example) • Overdependence on primary energy imports such as oil and natural gas, in spite of nuclear energy in the national mix. • Overdependence to a limited number of countries for natural gas.

Overall, the French economy is a strong industrial economy with much technological strength that makes it globally competitive. In terms of energy, France has vast experience, technology and know-how to provide energy security through many leading energy companies such as EDF, Areva, Total and Engie. Furthermore, France is perhaps the best known country to secure the highest percentage of its electricity needs through nuclear energy. This provides the necessary electricity demanded for a strong industrial economy. Furthermore, Paris is referred to as “the city of lights” and is one of the most important global metropolitan centers in the world, with many headquarters of multinational corporations, international organizations, fashion and design firms, all aggregating to a strong domestic market and considerable financial and human capital available.

These advantages provide France certain important opportunities to ensure its energy security. The first is through its established corporations that have major civilian nuclear technological know-how, France has an opportunity to further develop civilian nuclear energy in emerging economies and be a flag-bearer in terms of establishing gold-standards, safety and security best practices, transparency and the necessary safeguards to serve as a model. And this would ensure new opportunities for continued preeminence of France in civilian nuclear energy developments and technology. Furthermore, France would have not only nuclear, but other opportunities in developing renewables in foreign assistance and international development. French is a widely spoken language in Africa, and France has traditionally maintained a cultural and economic role in assisting the development in the African continent, that could become continued and reliable available sources and markets to maintain energy security. New renewable technologies would present new opportunities, not only in Africa but in a continued French leading role in the EU’s Energy Union, which would contribute to France’s energy security.

However, France still faces considerable vulnerabilities and weaknesses that would pose potential threats to its energy security. Perhaps most important of these vulnerabilities is the strategy by which the limited availability of domestic energy resources had been offset by decades through the development of nuclear energy. This led to overdependence on nuclear energy for supplying domestic electricity needs. Since the end of Chirac’s presidency, there seems to be a lack of clear leadership or vision regarding the future of nuclear energy. As part of presidential elections,

Francois Holland had promised to decommission the oldest nuclear power plant in France. As per the campaign promise, however the decree to decommission the oldest power plant by 2020 was made in 2017, only at the end of Holland's presidential term in office ("France issues decree to close its oldest nuclear plant by April 2020 - ENERGY," n.d.). This last minute and mostly symbolic decision to decommission, essentially leaves the burden of decision on the issue to a new president that has been elected in 2017. Until the win by Emmanuel Macron in May 2017, there was some degree of uncertainty regarding France's role within the EU or even possibly a FREXIT referendum as suggested by two of the four main front-runner presidential candidates (Sputnik, 13April 2017- b). Now Macron favors a new dynamic French role in the EU.

There's also an uncertainty vis-à-vis the future of nuclear energy, as there is, though not as strong as in Germany, still a perceived threat regarding the safety, security and environmental risks associated with nuclear energy. This concern though, was not significantly reflected in the interviews. However, due to overdependence on nuclear energy for electricity, on natural gas, and on petroleum for transportation, shortages of which is associated with potential threats to French energy security. The sections below, would further discuss the exogenous shocks and their effects on the French government, as observed from field interviews, archival and other research.

For this research, 9 interviews were conducted concerning France. Of these 9 interviews, 7 were with observers and only 2 with government officials. In facilitating the interviews an economic attaché from the French embassy in Ankara met with me in person and was extremely helpful in facilitating the process, but she/he herself/himself was not interviewed. Except from two online interviews, all interviews were conducted in person, almost all in French, while in Paris and in Brussels in 2012. One of the online interviews was abandoned less than half-way through and could not be concluded, but the part that was concluded provided sufficient data to be included.

4.2 Responses to exogenous shock: 2003 invasion of Iraq

4.2.1 Crisis background

The French government, and the President of the time, Jacques Chirac, were outspoken in their opposition to the United States' "coalition of the willing" invasion of Iraq and overthrowing Saddam Hussein. The difference in attitude at the time created the so-called Transatlantic Rift of the time, and France, Germany being described as "Old Europe" by the Neo-Con administration of U.S. President George W. Bush.

Indeed, the "Old Europe" or the countries in Western Europe that were in NATO during the Cold War, but particularly the locomotive countries of the European Union, namely France and Germany, were leading the opposing voices against unilateral military intervention that was not endorsed by the UN Security Council (The Guardian, 2003).

Though opposed to the U.S. lead coalition, it is misleading to assume France (and for that matter Germany) were attempting to 'balance' American power. There wasn't a significant concrete diplomatic or political action against Washington. France and Germany's actions can better be described as depriving the George W. Bush administration from multilateral legitimacy and bilateral assistance. The main motivation and justification for withholding support to the US-led coalition was to oppose to what they considered a rushed war. France and Germany opposed a "rushed war" and encouraged others to do likewise (Moravcsik, 2003). Germany and France's stance were an important reason in the lack of consensus in 2003. The division in the UN Security Council was also reflected within NATO and there was no consensus among Alliance members regarding military action against Iraq (NATO, 2015, retrieved 18 August 2016).

Arguably, an important reason for French opposition concerned the dealings France had with the Saddam regime (which dated back to the French-Iraqi nuclear cooperation in the late 1970's and early 1980's). And Total was in particular important for allegedly having concessions in Iraq for oil fields. Although the United States was accused by some to have really started a war over oil, the Neo-Cons have also counter-argued that privileged oil concessions was the reason why France opposed the change of the Saddam Regime. US hawks had accused France of opposing the Iraq war in order to protect its vast oil interests in the country. According to the Guardian, Total allegedly carried out a sustained lobbying campaign for the Saddam regime with a view to putting itself in prime position to gain from any lifting of UN sanctions. These were dismissed by the

French Government and President Chirac as being politically motivated (Barnett & Bright, 2004). As a matter of fact, Total was directly competing against Shell over some of the largest oil fields in Iraq, which would be discussed in more detail in the chapter on the Netherlands. French media and public had at the time stood firmly behind the decision to oppose such an occupation. The influential *Le Monde* newspaper, at the time had even stated that the United States was lying to the world on the issue of the existence of the Weapons of Mass Destruction (WMDs) that the Saddam regime allegedly possessed (“Mensonges d’Etat,” 2003).

Nearly a decade later, France mostly stands behind the refusal, and many in the French public from different spectrums of society believe that opposing the 2003 invasion was indeed the right thing to do. (Clavel, n.d.) Since then, the transatlantic rift has been mostly mended, (“10 ans de chaud et froid entre Paris et Washington - L’Express,” n.d.). The current American and French governments under the Trump and president-elect Macron (as well as their predecessors Obama and Hollande) still face the difficult security challenges that were in part the result of the instability created by the 2003 Iraq War.

4.2.2 Policy makers’ and observers’ perceptions of problems and solutions

The French responses were as expected and viewed the Iraq invasion as a mistake by the American administration. And further believed that it was an important reason in the rise of oil prices soon after. An important nuance was that the respondents didn’t “blame” the American administration, or accuse the Neo-cons of invading Iraq just for oil. Instead the emphasis was that it was a miscalculation or a mistake that should not be confused with the “grand theories” of conspiracy theorists. The responses as in Table 8, were not very strongly indicative, and were mostly citing more than one factor or other motivations beside oil. Furthermore, one of the interviewees’ first reaction was “I don’t believe in conspiracy theories.” The general tendency was that oil might have been one of the factors, and an important one but definitely not the overarching main reason or the predominant only reason.

4.2.2.1 Short term responses (markets): TOTAL the energy national champion.

One of the most important short term responses was France's decision to not join the 'coalition of the willing.' Although this precedes the invasion, the period of diplomacy at the United Nations in the run-up to the unilateral invasion is for the field of international relations an important episode and for diplomatic "Transatlantic Rift" is perhaps as important as the actual invasion itself.

France had immediate losses of oil contracts that Total SA had with the Saddam Hussein regime in Iraq. Regarding the markets, however, an interesting factor, in spite of losing existing contracts under the Saddam regime, was the rise in the stock value of the newly created TotalFinaElf supermajor that is now Total SA. Although the merger completed in 2000 ("TotalFina-Elf merger completed, firm renamed," Oil & Gas Journal, March 2000) preceded the 2003 Iraq invasion by several years, it turns out serendipitously to be a fortunate asset for France. This was indeed a type of adjustment that would turn out to be opportune due to the reasons explained below. With a national champion, France could access and leverage oil from the international market Total SA's (TOT – NYSE) shares actually increased considerably from January 1st, 2003 (33.96 adjusted closing price per share in NYSE) to December 1st, 2007 (82.60 adjusted closing price per share in NYSE) ("TOT Historical Prices | Total S.A. Stock - Yahoo Finance," March 2017). The existence of a national champion energy company, France was able to consolidate and offset to a certain degree the lost contracts from Iraq.

France's and Total's interest in Iraq were considerable during the Saddam Hussein regime. Total's involvement were later found out to be controversial with the oil-for-food scandal and bribes under the Saddam regime ("France's Total fined €750,000 over Iraq 'oil-for-food' scandal," 2016 : 24). These fines were discovered in spite of an earlier acquittal from the allegations ("Total and CEO acquitted in Iraq oil-for-food scandal," 2013). In the immediate aftermath of the 2003 invasion, even though the price of oil would gradually rise, Total, and France were deprived of the previous agreements concluded with the Saddam regime. But one of the possible domestic market adjustment that could have been made, namely consolidating firms to "Bundle" and create a national champion, had coincidentally been merged merely a few years before the exogenous shock occurred. This is probably an action that could be classified as DMA, however it was not in

reaction to the event and therefore was conveniently readily available. Unlike the ‘escalation of diplomacy at the UN corresponding to a few months before the actual war, this merger was completed a few years (medium-term) before the war in Iraq, and thus is not qualified as an “adjustment” to an exogenous shock. However it’s worth making the observation to understand the ‘seeming’ inaction. This was therefore a reason why no particularly significant additional adjustments have been observed by the research, other than TOTAL seeking new fields other than re-gaining contracts for those in Iraq.

4.2.2.2 Long term responses (geopolitics): EGA (more observable).

The quest to increase further interconnectivity within the EU has been a goal of French policy as part of compliance to EU norms, and became even more important since the invasion of Iraq in 2003. This is an important feature understood by France’s overall support to further European transmission integration (such as ENTSO-E) or developing the Energy Union. Opposition to what was perceived by the French government as American unilateralism (Pachta, 2003 : 10-12) was an important and observable response in the period prior to, during, and in the aftermath of the 2003 US occupation of Iraq. France has since been a driving force of the ‘Europeanization’ of security and of European Common Foreign and Security Policy (CFSP) (Pachta, 2003). This was a visible EGA on the part of the French government on military-security perspectives. The energy dimension in this opposition was as described above in part connected to the oil deals French companies were involved with under the Saddam regime. It’s worth remembering that field interviewees for France didn’t ‘blame’ the US but saw the decision as a mistake. Furthermore, although the French interest in Russia corresponds to the 1990’s, they have significantly increased since the year 2000’s. This interest though, was in part driven by the transatlantic rift, however the increased activities of TOTAL in Russia up until the sanctions regime in 2015, constitutes an EGA type of adjustment in the long term. The discussion on the topic however would be discussed under the following exogenous shock, the Russia-Ukraine Crisis of 2005/6 in the section below.

4.3 Responses to exogenous shock: The Russia-Ukraine natural gas crisis of 2005/6

4.3.1 Crisis background

When the first Russo-Ukraine gas crisis that led to a gas shortage across Europe in the middle of winter occurred, many in Europe, and French media had been at the time prudent. Rather than justifying Ukraine's behavior, the French Government was trying to secure the continuation of gas delivery. The French government was not standing in opposition against Russia (Ministère des Affaires étrangères, 2009). The tone of the media was also more concerned about the situation occurring in the middle of winter ("La Russie coupe le gaz à l'Ukraine," 2006, "La vague de froid en Europe de l'Est a fait près de 80 morts ce week-end," 2006). Besides, Total had been involved in several projects in Russia, or in cooperation with Russia over pipelines to Pakistan and India (TAPI) (Sputnik, n.d.-a). But on the other hand, the incident was immediately once again energy security and geopolitical concerns in France and in Europe (Bezat, 2006; Nougayrède, 2006). The concern over energy security is of primary importance, as European governments (including the French governments) are aware about the dangers of being vulnerable if they depend on a single country of origin which dominates strategic resources (Bezat, 2006; Nougayrède, 2006). Though awareness as well as concerns was growing, few anticipated how violent the crises would eventually develop within a decade. Few people could have foreseen how eventually there would be internal crises in Ukraine, ending with the annexation of Crimea by Russia. By contrast, the attention was going to be turned to what would become one of the greatest economic recessions in the last decades.

4.3.2 Policy makers' and observers' perceptions of problems and solutions

On this issue, the French respondents during the interviews had a "balanced" view in avoiding putting the "blame" on Russia. A couple of times, though not in a strong tone, the interviewees in France mentioned how the Ukraine was also responsible and that the two countries should have bilateral dialogue to resolve the issue.⁴⁹ This is pretty much similar to the views expressed by

⁴⁹ Annex 1 and Interview Notes.

major French newspapers (“La Russie coupe le gaz à l’Ukraine,” 2006). The French correspondents also do not think Russia-Ukraine crisis has much impacted the EU energy policy, perhaps because, even though the French are strong supporters of EU integration, on energy issues they seem to opt for energy independence (even from the EU).

Therefore, the researcher assumes that many of the interviewees in France didn’t expect the crisis to reach a stage of instability that would result in violent military and territorial conflicts. And also this assumption that “countries would resolve the issue through dialogue” has inevitably disregarded the sad reality that such tensions could potentially become conflictual.

However, there was an important policy developed in the summer of 2005 in the immediate aftermath of the crisis between Russia and Ukraine. Law 2005-781 of 13 July 2005 entitled “*Programme fixant les orientations de la politique énergétique*” (The program fixing the orientations of energy policy) or in short POPE. The provisions aimed at encouraging energy efficiency, research and development (R&D), electricity generation through renewable energy, and maintaining nuclear power generation (IEA, Energy Policies of IEA countries, France 2009 Review, 2009 : 19). This comprehensive energy policy is complex and is a combination of DMA and EGA, however it had a long term time horizon. In this research, it’s accepted as the basis for the further development of Renewables, and the ensuing other REFITS that would be issued after the 2009 economic crisis.

4.3.2.1 Additional short term responses (markets): seeking short term supply/solutions ex; LNG

France’s immediate response under the shock was to seek immediate palliative measures to provide supply to the markets, through increasing LNG imports among others. Yet France, with the availability of other alternatives of North African natural gas through Spain and Italy (Francés & González, 2014), as well as North Sea resources, had more options than the Eastern European countries. Today, as of 2015, Norway is the largest exporter of natural gas (mostly non-LNG) to France with 46.84% of the natural gas imported to France, while Russia is second with 12.74% (Source: IEA Energy Balances 2016).

In the more medium-term market response, France also provided a more detailed program to incentivize renewable energy. Particularly new detailed REFITs were introduced in the aftermath of the Russia-Ukraine crisis of 2005/6. Although technology-specific tariffs were introduced in 2001, and 2002 was when the first incentives for solar were provided, it was specifically in 2006 and 2007 that the more comprehensive tariffs were introduced for wind and new types of hydro (Jacobs, 2016 : 106-108). More refined REFITs based on the different types within a renewable source (ex; wind as on-shore, and off-shore) were introduced later. This subsequent development of REFITs is accepted in this research as a very clear example of a DMA as a response to an exogenous shock in the short term. As such, this adjustment is a nice illustration of the Term Structure Approach to energy security, and an increasingly more observable adjustment in recent years. In that respect, the response is similar to Turkey's response, although Turkey's more comprehensive REFITs were ratified in 2010.

4.3.2.2 Long term responses (geopolitics) EGA (more observable).

France until the later shock in 2014 over Ukraine that led to a sanctions regime, was indeed cutting unilateral deals at the expense of EU solidarity. While until that time, the argument could be made for considering Total's involvement in Russia until 2015 as purely business oriented transactions between Total and Gazprom, even then the dominant role of the Russian Government in Gazprom would challenge such claims. Although the actions of a private company making 'business' deals in Russia may not automatically qualify as EGA, the rise in Total's involvement in Russia between 2006 and 2014, were marked by the need for high level contacts to make deals with Russian government, with support from their home governments, and thereby this would indeed qualify such actions as EGA for the purposes of this study. Furthermore, the sanctions regime necessitating Total to pull out from the Shtokman project in 2015 further demonstrate how 'geopolitical' the relationship may have been. Furthermore, Total as a supermajor, resembles in many aspects, the NECs, although its vast operations in different geographical settings still classifies them as MNEC for this research.

Total's upstream exploration efforts and activities in Russia are noticeable, and particularly the increase of shares in projects since 2006. It's worth noting that since 1990's the French supermajor energy company has had interests in entering the Russian market, however important deals such as the Shtokman project were signed in 2007, in the aftermath of the crisis with Ukraine. Total was particularly involved with the Shtokman project (Nilsson & Filimonova, 2013). This offshore natural gas project in the Arctic regions in the Barents Sea, is depicted as an essential source feeding Blue Stream 2 ("Shtokmanovskoye field," Gazprom.com). Total's involvement is attributed to bilateral relations between France and Russia rather than an EU lead policy. After all Total was active in Russia by operating since 1995 the Kharyaga oil field in the autonomous district of Nenets. And in 2011, Total was even further involved in Russia by increasing its share from 12% to 20% in the Yamal project (jointly operated by Russian company Novatek), in order to exploit LNG (Nilsson & Filimonova, 2013 : 14-15). Total's involvement in the Shtokman project predates the Yamal project, and is considered as evidence of the then-strong interest of France to develop bilateral relations with Russia:

As for the Shtokman project, in 2007 Gazprom signed agreement with Total and the Norwegian company Statoil (named Statoil Hydro prior to 2009) to develop a first phase of the Shtokman project, mainly involving financing, construction and project operation. However, Gazprom did not give the companies the right to sell produced gas; this remains Gazprom's prerogative. In 2008, three companies established the Shtokman Development consortium, where Gazprom had 50% of shares, and Total and StatoilHydro had 25% and 24%, respectively. The involvement of Total has roots in business and bilateral relations between France and Russia, rather than in political relations between Russia and the EU... (Nilsson & Filimonova, 2013 : 14-15).

In 2014, Total's CEO and other top executives died during an airplane accident in Russia. Total was shaken by a tragic and unusual accident at the Vnukovo airport in Moscow in October 2014, which resulted to the death of their influential CEO Christophe de Margerie.(Gauthier-Villars, 2014) The accident was indeed peculiar due to the private jet hitting a snow removal vehicle during take-off. Total, today faces the challenge of becoming an overall multinational energy company, as the prices of oil and natural gas are reaching their lowest levels for over a decade. Total has since pulled out from the Shtokman project in June 2015 due to the sanctions regime imposed on

Russia(The Economic Times, 24 June 2015). Considering the involvement of Engie and Royal Dutch Shell in the Nord Stream 2 project as of 2017, the decision to withdraw from Shtokman is an issue of interesting further research. The nuance between the Shtokman and Nord Stream 2 projects is that the former concerns being directly involved in a project within Russia, and the latter is a project transporting gas from Russia.

4.4 World economic crisis since 2009 and oil price fluctuation

4.4.1 Crisis background

The mortgage crisis in the United States soon started to create an economic slowdown that would negatively affect the rest of the world. But even a greater concern was how the economic turmoil created an environment of extreme price volatility in the oil and gas market. It was a difficult situation when the OPEC was puzzled about how to react to the sudden fall in prices, and arguably whether it still had the leverage it once used to have (Ramsay, IFRI, 2008). The effects were of such great concern that it was not just analysts, academics, and journalists, but heads of states and heads of government were openly trying to reach out to the public by publishing joint articles. One such very pertinent document was the joint message that UK's Prime Minister Gordon Brown, and French President Nicolas Sarkozy writing a joint Op-ed piece in the world renown Wall Street Journal (Brown & Sarkozy, 2009). This piece is a primary source about the concerns and opinions of two important global leaders. For the purpose of this dissertation, the article is indeed drawing attention to the role of government 'supervision.' Brown and Sarkozy went further into calling for a specific agency; "We therefore call upon the International Organization of Securities Regulators to consider improving transparency and supervision of the oil futures markets in order to reduce damaging speculation" (Brown & Sarkozy, 2009).

The international organization or organizations in question, that took some important actions were the following: The G20 established the Financial Stability Board (FSB) in April 2009 so that the FSB would collaborate on the issue of global financial stability ("Our History - Financial Stability Board," fsb.org , n.d. access 17 April 2017). The FSB then notably collaborated with the

International Organization of Securities Commissions (OICV-IOSCO or IOSCO), and tasked the IOSCO to develop guidelines for money market mutual funds (MMMFs) (Claessens & Kodres, 2014 : 20). As of June 2010 the core principles of the IOSCO specifically addresses global securities, including oil futures markets (“OICV-IOSCO - Iosco.org,” n.d.). The specific call by Brown and Sarkozy was on limiting the role of speculation, due to the extreme volatility experienced most notably in oil prices. As a consequence of this request by Brown and Sarkozy, as well as international consensus on the issue and similar other requests within the G-20, in June 2010 the IOSCO core principles and standards document sets 38 principles of securities regulation. The 3 main objectives of security regulation for which these 38 principles were set for are:

- Protecting investors;
- Ensuring that markets are fair, efficient and transparent;
- Reducing systemic risk (IOSCO, 2010).

In this research, the role of more robust international institutions is considered as one of the useful ways for ensuring regional energy security and hence a type of EGA adjustment. Furthermore, the role of securities in global financial markets underlines the important role of international institutions to effectively regulate energy futures and financial derivatives in the global markets to prevent reckless speculation and extreme fluctuations.

The two leaders (Brown and Sarkozy) further drew attention to the extreme volatility in the energy markets, which was making it difficult for companies, government, and individuals to adapt to such volatility in times of crises;

For two years the price of oil has been dangerously volatile, seemingly defying the accepted rules of economics. First it rose by more than \$80 a barrel, and then fell rapidly by more than \$100 before doubling to its current level of around \$70. In that time, however, there has been no serious interruption of supply. The oil market is complex, but such erratic price movement is cause for alarm. The surge in prices last year gravely damaged the global economy and contributed to the downturn. The risk now is that a new period of instability could undermine confidence just as we are pushing for recovery. Governments can no longer stand idle. Volatility damages both consumers and producers. Importing countries, especially in the developing world, find themselves committed to

big subsidies to shield domestic consumers from potentially devastating price shifts. In Britain and France we know-how the price of crude dictates the price of petrol at filling stations -- and the effect it has on families and businesses. And for countries heavily reliant on income from oil exports, the windfalls from brief price surges are offset by the consequent difficulties of planning national budgets and investment strategies...(Brown & Sarkozy, 2009).

The two heads of state and government continue to draw attention to the point that the volatility is also making it extremely difficult to realize upstream investments (which decreased by 20% in a year), which require long term planning. Then Brown and Sarkozy reaffirm commitment to continue dialogue with energy producers in international organizations such as the International Energy Forum and OPEC. The role of institutional collaborative frameworks could potentially be a contributing factor for international market stability. Thus, there could potentially be even more role for IOSCO, or similar organizations as policy tools EGA (as multilateral diplomacy).

Furthermore, the research suggests the possibility of continued and perhaps expanded role for an international institution such as the IOSCO, for regulation of energy security from the level of the financial markets. In fact, French Academia has been proactive and highly supportive of the need of regulating international financial markets for achieving energy security (Chevalier, 2010 : 153-156).⁵⁰ The French government keeps the general regulation of the global economy as a priority in its foreign policy agenda. Regulation is deemed important for; “the establishment of common rules, allowing stakeholders to compete on a "level playing field" and limiting "free-riding" situations.” Therefore, there’s an open objective of making international regulation an asset for the French economy (France, Ministry of foreign affairs, n.d.).

This importance attributed to international organizations is beyond the “Europeanization” of security and politics. It is due to a significant systemic level gap and lack of regulation in an issue with global impact and consequences such as financial markets. For various reasons, but perhaps

⁵⁰ JM Chevalier’s article insists on the regulation of financial markets as a major element: Chevalier, Jean-Marie. « Volatilité du prix du Pétrole, Régulation Financière, et Politique Energétique » *Revue de l'Énergie* , 595 (May/Jun 2010): 153-156.

most importantly because of a “lack of governmental burden sharing arrangements” (Claessens & Kodres, 2014 : 27), the supervision and coordination of cross-border (and international) financial institutions’ regulation of their activities potentially impacting the global markets, are still relatively opaque, in spite of efforts for more transparency. And although the IOSCO has established certain standards, they are not concerning regulating systemic (and thus geopolitical) risks such as the world oil prices. According to Claessens and Kodres (2014):

Some guidelines have been issued by IOSCO and the Committee on Payments and Settlement Systems (CPSS), but they are not focused on systemic risk regulation, but on level-playing field considerations and establishing minimum requirements of various types (often devolving to the lowest common set to which all can agree). The thinking is just beginning about how interconnections across jurisdictions may alter how crucial institutional infrastructures might be affected under stress. The FSB was set up, at least in part, to ensure better international coordination across financial regulatory regimes – and it has had some success in doing so. However, as with most international bodies (e.g., the Basel Committee, IOSCO, and the CPPS) decision making has to occur by consensus and the FSB has no mechanisms for enforcement of its guidance beyond peer pressure. Consideration of a body with global jurisdiction and authority has been bandied about, but the crisis did not provide enough impetus to develop such an agency (Claessens & Kodres, 2014 : 27).

Institutions and regulations are important elements both in France’s and Netherlands’ energy security policies. Both were favorable to the further solidarity and “Europeanization” of their Energy Security following the 2009 Economic Crisis (as well as the 2003 Iraq invasion, as well as the 2005/6 Russia-Ukraine Crisis).

For instance, in a Press Conference on 14 September 2009, Pierre Lellouche (Secretary of State for European Affairs between 2009 and 2010) mentioned several points on energy politics;⁵¹

⁵¹ Original press statement (in French) of Mr. Lellouche on 14 September 2009; Accessed from the French Foreign Ministry Website: <http://www.diplomatie.gouv.fr/fr/politique-etrangere-de-la-france/europe/evenements-et-actualites-lies-a-la-politique-europeenne-de-la-france/conseils-affaires-generales-et-affaires-etrangeres/precedents-cag-cae/article/conseil-affaires-generales-et-76416#> (Ministère des Affaires étrangères, 2009) The Entire Press Statement in French of Mr. Lallouche is available in the annex.

First of all, I would like to make homage to the Commission (EU Commission) for an extremely useful work on the emergency measures to take in case of crises

Furthermore, I believe that now the time has arrived to make Energy a dossier of priority for what I call the “new Europe” And I hope that with the Lisbon Treaty, we will have our institutional chapters. Once we close those institutional chapters, there will be a need to make politics in Europe... in order to handle the great problems....[one of these] is the problem of Energy. Energy was at the base of the idea of the European construct, which began with the ECSC (Coal and Steel) and the EURATOM. The Coal and Steel were at the origins of many wars and conflicts between European countries. Today, we are in a situation of at the same time great heterogeneity in energy politics. On nuclear, some are for and others are against... also as regarding the level of development for renewables, dependence on supplier countries. For instance in the Iberian peninsula.... there’s no dependency on gas from Russia. Whereas other states in Central Europe, Baltics, or Bulgaria, there’s 100% dependence on Russia for natural gas. But we face a supplier with a strategy of pipelines, which consists of different delivery strategies to different countries of the European Union... But we don’t have a common policy and we have certain isolated countries and therefore we have a tactics of sausage-ing and salami slicing...”

Lellouche further continues on by saying that he wishes a relation of stable and mutual interdependence with Russia, which he considers as both a partner and a friendly country, but this does not mean that the partnership should be in disequilibrium. He further stresses that, in order for this partnership to produce security for everyone, supplier and consumer states alike, it should be balanced and (making reference to the French President of the time) the regrouping purchases which would provide a collective buying power to the buyers. And consequently affirms that Energy would be a priority in French-German relations, and especially the ‘green’ technologies. At the conclusion, on the section concerning energy matters of his press statement, Mr. Lellouche notes that energy is a strategic element [of policy], and that it is now (September 2009) a convenient time for Europeans to ‘re-conquer’ about geopolitics at a global scale. He clarifies what he means by ‘reconquering geopolitics’ as follows;

Reconquering geopolitics first and foremost means managing their energy. We are dependent and it's up to us to reduce this dependency and to diversify their sources of supply, diversify the types of energy, but also, regarding our suppliers, to build an interdependent relationship that is in more equilibria than it is today. And the way forward is through genuine cooperation to begin not only between France and Germany, but also with others (Ministère des Affaires étrangères, 2009).

The consequences of the economic recession are still being felt to this day, and France still is one of the countries that feels the effects of this economic downturn, affecting its major energy companies, as well as the French economy as a whole. The EU Commission's work are described as "extremely useful work on the emergency measures to take in case of crises." Presumably, austerity measures are also included among these 'useful' emergency measures. In addition, the emphasis of an Energy policy is evidence of what is described as the "Europeanization" of policy. Therefore, this 'Europeanization' of policy is a form of EGA and external balancing (as per the internal/external balancing). This is another evidence of how a 'strategic context' is provided to shape even a "common market" like the EU. Thus the statement is interpreted as evidence of how geopolitics set the framework within which the markets operate. The further reference to both the ECSC and EURATOM as basis of the European construction of institutions reinforces such conviction.

4.4.2 Policy makers' and observers' perceptions of problems and solutions

The French respondents to the field interviews conducted for this research gave various answers across the spectrum. However, 4 out of 9 saw it as a result of the economic Supply and Demand factors. On the other hand, a non-negligible number of respondents (3) further drew attention to the role of speculations. The strong call for regulation by the French President of the time, and the topic listed amongst the priorities by the foreign ministry (France, Ministry of foreign affairs, n.d.) were to some degree but not necessarily as strongly reflected in the interviews. However the signals for regulation and the economic need to have supply and demand operate, were present in a certain number of interviews. It is worth noting that there were fewer interviews conducted

concerning France than there were for Turkey or Netherlands. It is also important to consider that interviews that were conducted only a couple of years after the start of the global financial crisis reflected the need for regulation and worries about speculation, not only among the French interviewees, but also in general. The French respondents reflect the highlighting of the issue by the French policy makers. There was an active effort on behalf of the French government at the highest level (Presidential), to have and EGA-type long term response to the exogenous shock of the economic crisis by further developing international institutions on the issue of speculation. The EGA-type adjustments seem to have more impact for France at the European level than at the global arena, as identified from the interviews.

The emphasis on the increased collaboration with the EU and deepening of European institutions, such as the creation of an Energy Union were also touched upon as a need by the interviewees. However, similar to regulations, it was a need that was mentioned without necessarily being related to the economic crisis. Responses were more on the need to develop a national policy, what the French government could do, such as developing investments in renewables and nuclear energy, as well as reduction of taxes. In fact a couple of the interviewees mentioned the high levels of the tax on fuel⁵², and a decision to lower that as a possible policy instrument available but not used. The concern on the risks of speculation, in general seemed to be best addressed by building more domestic capabilities.

4.4.2.1 Short term responses (markets) DMA:

As the oil prices went lower, and there was in general a debate about austerity in Europe, which was advocated by Germany and by and large being echoed by the French government. The domestic actions in terms of energy security were limited, or difficult to observe. If one were to consider discussions of using “Strategic Reserves” they were not implemented, and it’s also not a clear DMA type adjustment. There were some austerity in the many incentives, but there was a

⁵² The tax is currently called the ‘Internal Consumption Tax on Energy Products’ and it used to be called the Internal Consumption Tax on Petroleum Products (La taxe intérieure de consommation sur les produits énergétiques — TICPE , anciennement « taxe intérieure de consommation sur les produits pétroliers — TIPP »)

general approach in favor of continuing investments in Renewables, as with new more comprehensive REFITs in addition to those that were already published a couple of years earlier, largely as a response to the previous exogenous shocks. Hence, for the case of France, similar to Turkey, there weren't that many substantial or significant short term DMA in the area of energy security, observed by this research or through interviews.

4.4.2.2 Long term responses (geopolitics) EGA:

Perhaps, the most visible and direct source in response to the financial crisis was the open call in 2009 of French President Sarkozy, together with British Prime Ministry Gordon Brown for the International Organization of Securities Regulators (presumably an organization like the IOSCO or actually the IOSCO) to consider improving transparency and supervision of the oil futures markets in order to reduce damaging speculation" (Brown & Sarkozy, 2009). This, as discussed earlier is a substantial attempt at the highest level to form an EGA in the long term. It remains to be seen how effective the changes adopted by IOSCO would be, and one would not be able to fully assess the impact until there's another potentially similar shock. This example is worth considering for future researches on long term EGA policy tools that are examples of institution building and multilateral diplomacy.

4.5. The 2011 Fukushima nuclear meltdown in Japan

4.5.1 Crisis background

When the Fukushima earthquake followed by the tsunami, causing the meltdown of the nuclear reactors became known to the global public, the disaster called into question the use of civilian nuclear energy, as well as bringing a halt to the so-called nuclear renaissance. France, which traditionally had a more favorable reaction to nuclear energy due to relying so much on it, did not initially have a sudden shift in public opinion. Hence, no resemblance to the reaction in Germany after March 2011 in the months immediately after the accident occurred. In a few months, following the Fukushima disaster, the French public opinion gradually grew more concerned and

skeptical of nuclear energy. And eventually there were certain times where there were more negative voices than positive ones on nuclear energy in the French public opinion. But, with such over-reliance on nuclear energy, the French public was never as unfavorable as the Germans against nuclear (Boselli “Reuters Analysis,” 2011). Furthermore, the most that could be done was to emphasize safeguards, precautions, stress tests, and perhaps decommissioning the oldest facility.

The role of nuclear energy in France has been as deep rooted as Pierre and Marie Curie discovering radiation. France is perhaps the first country that comes to mind in the vast use of nuclear powered electricity. In fact, when in 1945 the *Commissariat à l’Énergie Atomique* (CEA) / Atomic Energy Commissariat was created, Frédéric Joliot-Curie was at its head (“France,” n.d.). EDF was created in 1946, and the country’s first power plant became operational in 1964, and today around 80% of the electricity of France is generated by nuclear energy. In 1999, the French Parliament’s “three pillars” of energy policy were security of supply, respect for the environment (lowering greenhouse gas emissions), and dedication to properly managing radioactive waste. But France was also in a unique situation, with most of its electrical power coming from nuclear (“France,” n.d.).

Since Hollande’s election, and furthermore with the increased costs due to anomalies of the Flamanville project (“EPR de Flamanville, nouvelles anomalies repérées,” 2015) there has been increasing public skepticism on developing new nuclear facilities. Even though the level of opposition is not as much as in next door Germany which started a faster pace of shut downs, there is a growing concern about the need and future of nuclear energy. The existing concerns after Fukushima did not stop the government from going forward with the Flamanville project (“France expands nuclear power plans despite Fukushima,” n.d.). By contrast, the problems that began in Flamanville, which had not been halted in spite of Fukushima, was important in triggering more debates and skepticisms against nuclear power, even in France, where the public opinion was not as negative.

On the other hand, because of the over-dependence on nuclear energy, as well as all the jobs it creates in the industry, it is difficult call to decommission even the older nuclear plants. Thus, President Hollande was in a difficult position trying to, on one hand, appeal to public demands, but

on the other, face the reality of the difficulties of replacing so much baseload and domestic electricity in the short run.

One important factor that needs to be taken into account is that the anomalies in Flamanville became controversial only after the field interviews had been conducted in France. Therefore the interviewees do not reflect opinions with the knowledge of the added costs and difficulties in Flamanville. By contrast the interviewees did reflect the relative ‘success’ of France in making nuclear energy accepted in the Paris COP 21 and in the WEC Energy Trilemma as a potential baseload energy for low-emission energy sources.

A visible effect on both the nature of domestic investments and the thrust of maintaining energy security has been the focus on renewables. Renewables were at the center stage in domestic investments and also for the compliance with EU’s energy policy. Furthermore, renewables became even more important in recent years in the context of French International Development Assistance, as well as EU energy policy. The November 2012 foreign ministry documents clearly state the greater role of both EU Energy Initiative (with reference to the 2007 Lisbon Treaty) as well as renewables in development assistance projects (Both are in that sense policies of ‘external geopolitical adjustments -EGA’):

France is participating in the European Union Energy Initiative (EUEI) for poverty reduction that was launched at the 2002 Earth Summit in Johannesburg to promote improved integration of energy into poverty reduction strategies. France is also an active member of the Africa-EU Energy Partnership (AEEP) launched in Lisbon in December 2007 and helps to implement its Renewable Energy Cooperation Programme (RECP) through the AFD (Ministère des Affaires étrangères, 2012).

Growing attention to renewables and introduction of REFITs characterized France’s DMA-type policy since Fukushima. However, the debate over nuclear technology itself started after the added costs at Flamanville. On the other hand, in a diplomatic maneuver, France was successful include nuclear energy in major international multilateral platforms as a reliable baseload energy source to reduce emissions. The new president-elect of France in May 2017, i.e. President-elect Macron will

have a greater say in steering the countries' nuclear energy policy. The discussions below were conducted at a time when the President Hollande had recently been elected.

4.5.2 Policy makers' and observers' perceptions of problems and solutions

The interviews conducted until the end of 2012 did not display a significant criticism or concern over nuclear energy. It's worth noting, however, that the interviews did not include reactions to the Flamanville incident, which increased uncertainty even in France over the future of the nuclear industry. Therefore, as it was expected at the time when the field interviews began, France remained overall a strong proponent of nuclear energy in spite of Fukushima. However, even during the field interviews, the French interviewees noted that the President Hollande and the French public were interested in alternative options and announced plans to close the oldest reactor in France.

Since the interviews have been finalized, anomalies creating delays and cost increases of the Flamanville nuclear project became an increasingly more prominent issue. This was not an obvious issue at the time of the interviews, and many interviewees responded to the question with a sense of national prestige and trust to the French nuclear industry for its high standards of safeguards, best practices, and ability to pass through tough stress tests. Also, like the chain of events that happened in Ukraine, it was perhaps difficult to foresee something like the Flamanville incident. The delays in Flamanville became a major factor in increased skepticism even in France, of the nuclear industry, which were not reflected in the interviews at that point in time. Nine interviews were conducted concerning France, and at that time only one interviewee was expressing skepticism against nuclear energy. This was congruent with the initial expectations due to nuclear energy being so dominant in France. While the other 8 interviewees were in various degrees supportive of it and saw it as necessary for France's energy needs.

4.5.2.1 Short term responses DMA (markets):

Interestingly, the French reaction to Fukushima may at best be described as meager. The issue was however evident in presidential debates, and brought further scrutiny to increase safety, and security standards becoming more robust (“France,” K =1 Project page 1). The issue, however, was more fiercely debated after the continued problems and difficulties that delayed the Flamanville Reactor (Soleymieux, 2015). However, the verification of the robustness of the safety and security practices was pretty much the extent of the adjustments in the short term, and there was no other substantial response. Even the presidential decree of closing the oldest power plant, as promised in the elections campaign, was signed after nearly 5 years, at the end of Holland’s term, and therefore it’s not a short term policy.

4.5.2.2 Long term responses (geopolitics) EGA (more observable).

Responses seem to indicate that the government continues to retain a strong role in the policy development. This is not surprising because the French State had a more preponderant factor in society than in many neighboring countries. As such perhaps one may suggest a slightly more “realist inclination.” This would not be totally unsurprising given the state institutions going back in origins to Cardinal Richelieu’s *raison d’etat* thinking. But once again, one can only identify a slight inclination and not say that the Neo-Liberal paradigm is not rooted in the French elites.

On the 1st question in response to state intervention, the interviewees in France had a relatively visible stance in favor of the necessity of state intervention under certain circumstances.

Furthermore, the responses to the 2nd question as to whether energy resources were national resources or market commodities, the French, mostly see energy resources as national resources (8 out of 9 interviews express this view). This can be attributed to the strong traditions of state intervention in economy and nationalizations in France. This is not to say that private neo-liberal market economies are not prevailing in France. Still, the existence of strong national corporations, and private corporations that are treated as “national champions” makes it less surprising that in the energy sector, such a role of the state can be observed.⁵³

⁵³ Appendix 1

On the other hand, since Fukushima and Flamanville, France, similar to the Netherlands, also seems favorable in the long term to institutional cooperation with other EU countries (as a structure and thus EGA). Hence, it's not surprising that France's response to maintain energy security has been marked by a clear promotion of renewables since November 2012 (Ministère des Affaires étrangères, 2012) as it was typical with EU policies.

However, and in addition to the importance attributed to Renewables, the most striking success of France's energy diplomacy, and therefore EGA-type adjustment, has been regarding the acceptance of nuclear energy as low-carbon. The success of French Diplomacy on foreign energy policy in international platforms is noteworthy due to the acceptance of nuclear energy as low-carbon and part of both the Paris COP21 ("Consider Nuclear Energy on Par in Climate Change Mitigation," 2015) and the World Energy Council's World Energy Conference 2016 in Istanbul ("Programme by Topic | 23rd World Energy Congress Istanbul 2016," n.d.). In spite of an exogenous shock like the Fukushima fallout, and leading EU partner Germany announcing a total phase out of all nuclear energy by 2022 (World Energy Council & Oliver Wyman, 2016 : 15), France has been successful in the adoption of nuclear energy as a low-carbon energy in accordance with the goals of the COP21 and of the WEC. This is a significant in multilateral diplomatic environments as France is one of the world leaders in the nuclear energy industry. This also paves the way for France to remain an important technological and diplomatic partner for emerging countries aspiring to develop peaceful civilian nuclear power, which by their nature have a strategic context and patterns resembling alliance formation (Dirioz & Reimold, 2014).

4.6 Conclusions: term structures matter because of in short term market adjustment, and long term structural balancing (geopolitics).

The main and most noticeable adjustments both as DMA and EGA in long and short term can be summarized in the following way. As for short term DMA, the most important include the series of REFITs introduced. REFITs and increased investments in renewable energy as well as energy efficiency are also compliant with the major EGA-type adjustment, namely 'Europeanization' of France's energy security. There was a discussion of using the strategic reserves which was not

implemented. Though the investments range from shorter to some longer-term ones, renewables as well as EU standards in energy efficiency have considerably reduced France's primary energy consumption. In terms of EGA, other than the Europeanization of Energy Security, the most important other adjustment has perhaps been direct bilateral relations and investments with Russia. In spite of Total withdrawing from within Russia in 2015, Engie would be financing Nord Stream 2 project of Gazprom supplied gas, along with 4 other European firm.

It is observed, that even though sometimes perceived to be in rhetoric, France was and seemingly still is a promoter of the Energy Union and further Europeanization for energy security. On the other hand, like Germany, France and Russia, through TOTAL and GAZPROM, have cut bilateral deals in the area of Natural Gas. This, according to this research, can be explained as a sensible 'external geopolitical' adjustment the French government was making in order to maintain its energy security as a sovereign nation. Total's actions were medium term, and are still ongoing after nearly a decade and thus making these actions long term. On the other hand, this adjustment was nearly in parallel with continued efforts to further increase interconnection and Europeanization of energy security under an Energy Union in an even longer time horizon. However, in 2015, due to the sanctions regimes imposed on Russia, Total pulled out and transferred its 25% shares at Shtokman Development AG to Gazprom(The Economic Times, 24 June 2015). However, this was due to a new "geopolitical" exogenous shock in Ukraine in 2014. Still, in spite of the eventual withdrawal of Total in 2015, the decision to invest in 2007 still qualifies in this research as an important example of long term external adjustment. This is because, when devised in 2007 as a 'long term' external adjustment, almost no one could have anticipated the circumstances that led to the escalation of the crisis between Russia and Ukraine reached by 2014. Furthermore, this latest exogenous shock in 2014 is not one that is within the time of the interviews. The research observed 4 exogenous shocks between 2003 and 2011 and the interviewees' reaction in the aftermath of the developments in the year starting immediately after. Interviews started on October 2011 and were conducted over a period of 13 months (Annex 1). Therefore the current calls for stronger Energy Union within the EU were evident but not as ferocious as today before 2014.

Table 20. France's reactions to exogenous shocks as DMA and/or EGA.

DMA = Domestic (i.e. Internal) Market Adjustments; EGA =External Geopolitical Adjustments.

	E.S. 1) Iraq Invasion 2003	E.S. 2) Russia-Ukraine Gas Crisis 2005/2006	E.S. 3) Global Economic Crisis 2009 and extreme Oil Price Fluctuation	E.S. 4) Fukushima Nuclear Disaster 2011
FRANCE	EGA: Didn't join the Coalition of willing. EGA?: TotalFinaElf merger preceded Iraq Invasion	DMA: REFITS , renewables + Flamanville EGA: TOTAL deals with Gazprom in Barents Sea	DMA : talk of "strategic reserves" not implemented. DMA: renewables	Questioning nuclear and stop new plants, (debate after Flamanville rather than Fukushima); DMA: renewables EGA : interconnection in Europe and in France

Overall, the comparison of France to the main case study country, Turkey, also suggests congruence as a case where the Term Structure Approach is a useful analytical tool kit. Similar to Turkey (the main case), in France as well the energy relates policy adjustments can be understood by different EGA and DMA actions in the long and short terms. Overall, the French case suggests that in face of exogenous shocks, there were limited palliative short term DMA measures in place. Also, similar to the main case, in order to reduce vulnerabilities, longer-term EGA policies are

observable. However, the same action of developing nuclear in Flamanville, for the case of France is not considered an EGA, but rather a long term DMA, even though the investment itself has a strategic context. Furthermore, like Turkey, in France as well the DMA measures in the form of more comprehensive REFITs are observable.

Another important conclusion though in France is how late nuclear energy was questioned, and the decision to close the oldest nuclear reactor (“France issues decree to close its oldest nuclear plant by April 2020 - ENERGY,” n.d.) is a relatively symbolic action of nuclear power rather than an overhaul of the nuclear energy industry. France, through Total, was very active in terms of EGA type adjustment by conducting bilateral deals with Russia (especially in the Barents Sea), and the decision was only reversed in 2015 after political sanctions, which doesn’t change the understanding that at the time when the decision to invest to Russia was taken by Total, it was also a useful adjustment in order to develop bilateral relations, especially considering how powerful both Total and Gazprom are in the energy policies of their respective governments. Furthermore, in the area of nuclear energy collaboration, EDF still maintains its CIS office in Russia (“EDF in Russia and CIS,” 2016), in spite of the sanctions of the USA and EU since September 2014 (Ellyatt, 2016). EDF has been in Russia collaborating with Rosatom and subsidiaries (such as Rosenergoatom) for 20 years (since 1997), in areas such as operational safety and security, inspections, personnel training, technical support and other research and development, particularly on nuclear fuel cycle (“EDF in Russia and CIS,” 2016). Although the levels of the activities are mostly on training, safety, security and inspection safeguards, the collaborations are significant in terms of determining global standards on nuclear safeguards. Such collaboration suggests the strategic contexts of nuclear energy, and how they could be policy responses (or tools) to maintain energy security and French diplomacy (and thus EGA), yet for France a new nuclear energy investment domestically, is considered DMA.

However, for France, in order to maintain its energy security, perhaps the most common and important policy adjustment in response to all four exogenous shocks had been the Europeanization of its energy security and further developing the Energy Union. This action, is considered an EGA, because it’s an external action similar to alliance seeking or in this case alliance strengthening /deepening. Not only through the EU, but also through the institutions

governing regulations, such as ENTSO-E and other measures promoting interconnectivity, transit and transfer of energy commodities and electricity, France has sought to assure measures to maintain its energy security through external means (i.e. EGA). These measures, now seem to be mostly market oriented on the surface, however looking in retrospect to the solidarity with Germany in the UNSC in 2003, developing bilateral relations with Russia through Total, and discussions (though not realized) about the use of strategic reserves, are all adjustments with an EGA nature. Furthermore President Sarkozy and Prime Minister Brown called for international organizations against financial speculation of key commodities, such as oil. It was a call to safeguard global oil prices against market speculations by developing external institutions and essentially can be considered as EGA. France continues to hold regulation as important in its priorities in energy security.

Since the 2009 financial crisis, France, like Turkey, has been further developing renewables. Although France's introduction of REFITs were earlier, they were continued in the aftermath of the financial crisis. France has in fact since 2009 made significant investments and reforms in order to increase its domestic renewable energy portfolio, as well as achieving what can be described as a green economy. As described by the IEA; "France has witnessed the full decoupling of its energy consumption and carbon dioxide (CO₂) emissions from economic and population growth" (IEA, 2017 Energy Policies of IEA Countries - France 2016 Review : 9). According to the IEA, not only has CO₂ emission from fossil fuel declined in the last decade, but "the carbon intensity of the French economy is half the IEA average and has decreased by almost 30% below its level in 2004..." (IEA, 2017 Energy Policies of IEA Countries - France 2016 Review : 9). According to the same source, 3.3 gigawatts (GW) of coal power facilities (coal-fired) were decommissioned (Ibid).

Overall, both through energy efficiency and phasing out fossil fuel powered plants, France was able to reduce its level of energy consumption. By December 2015, when France was host to the United Nations' 21st Conference of the Parties (COP 21), France was able to display its domestic achievements of energy transition towards 2030 as model for the COP 21 objectives. Ever since the world economic crisis in 2008-2009, and since the Fukushima disaster in 2011, France adopted new policies such as carbon pricing, tax breaks, and incentives for new renewable energy and

electricity generating facilities, and energy efficiency. However, France has not, in spite of Fukushima, planned significant phasing out or decommissioning of its aging nuclear industry. The measures in the post-Fukushima era were on the safety of operations and security measures in order to ensure more robustness of those facilities. According to the IEA:

Électricité de France (EDF)'s so-called Grand Carénage is a refurbishment and safety upgrades programme required for the long term operation of its [nuclear] fleet. Its cost (capital expenditures [CAPEX]) was updated in 2015 by EDF to EUR 47.5 billion over the period 2014-25 (in constant euros of 2015) (IEA, 2017 Energy Policies of IEA Countries - France 2016 Review : 9).

In spite of the difficulties encountered, France has the opportunity to serve as a model both in REFITs and incentives on renewables, and energy efficiency, and for developing external and geopolitical partnerships in nuclear technology. The new president of France would be essential in providing leadership in this area. Turkey, as an aspiring country in the arena of commercial nuclear energy, would directly or indirectly collaborate with France (as in the case of Sinop, which would be developed by a Japanese firm, but with French solution partners). And for France, there are opportunities to develop nuclear energy in emerging dynamic economies rather than the more saturated European markets. For instance, the Netherlands has one commercial grade nuclear plant and is 'for now' not undertaking the development of a second nuclear plant. Different than France, however, the Dutch economy, although industrial, is more characterized by trading and commerce rather than manufacturing and heavy industries. Also the Dutch, unlike France and Turkey had domestic energy resources. The next chapter would assess the case of the Dutch governments over the same exogenous shocks.

CHAPTER 5

RESPONSES OF THE GOVERNMENTS OF THE NETHERLANDS

5.1 Background on energy security in the Netherlands

The population and area size of the case country is Netherlands. However the Netherlands' economy is much richer in proportion to its population. In fact the GDP of Netherlands is around the same size as the main case study Turkey.

The Netherlands has one operational commercial grade nuclear plant and is 'for now' not developing a second nuclear plant. Different than France, however, the Dutch economy, although industrial, is more characterized by trading and commerce rather than manufacturing and heavy industries. Also the Dutch, unlike France and Turkey had domestic energy resources.

Though home to Shell's headquarters, the Netherlands doesn't have significant petroleum production. On the other hand, it did have significant gas production until the extraction process became controversial in Groningen. Allegedly, seismic activity (tremors or small scale earthquakes) were caused by the gas production process in Groningen, which caused much controversy, and also a decline in the output of gas production domestically from the region, leading to more imports (including from Russia) (Boersma, 2015). The Netherlands is still trying to reach desired levels of economic growth that were not seen since the economic downturn which affected the Eurozone since 2009.

The Netherlands is a case country that tries to balance security and economics in the field of energy, and official discourse have clear contents on this domain. For instance, Henk Kamp, the

Dutch minister for economic affairs, underscores how international agreement and institutional organization based on a treaty, such as the Energy Charter, increase energy security worldwide. Kamp explains that in addition to energy security, these agreements build opportunities for businesses;

Until 2035, 48,000 billion dollars in energy investments will be required to meet the global demand for energy. The agreements reached today prove that countries wish to collaborate on an international level in the area of energy. It also offers new opportunities to Dutch entrepreneurs. Dutch companies install 70% of the world's offshore wind farms. The knowledge they have acquired can be put to good use in other countries. Signing the charter is a first step for countries wishing to join the Energy Charter Treaty. By signing the treaty, investments made by companies in that country enjoy legal protection, reducing the risks for the companies concerned” (M. van E. Zaken, 2015).

Table 21. Energy production and consumption for Netherlands.⁵⁴

(EIA:<http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=44&pid=44&aid=2>)

	year	Oil	Coal	Gas	Nuke	Hydro&	Renewables
PRODUCTION (MTOE)	2003	52.2		0.9			0.9
	2005	56.3		0.9			1.7
	2010	63.5		0.9			2.5
	2013	61.8		0.9			3.0
CONSUMPTION (MTOE)	2003	45.1	36.0	8.7	0.9		0.9
	2005	50.1	35.4	8.2	0.9		1.7
	2010	45.9	39.2	7.6	0.9		2.5
	2013	41.4	33.4	8.3	0.6		3.0

⁵⁴ The Energy Information Administration:
<http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=44&pid=44&aid=2>

The Netherlands is the most important energy hub in Europe in part due to the importance of the port of Rotterdam, having the headquarters of Shell, and having domestic natural gas sources available. Though not a significant petroleum producer, the Netherlands, until recently has been an important natural gas producer. Among the countries in Europe, Only Norway and Russia produce and export more natural gas than the Netherlands. But the largest liquid fuel and natural gas trading hub in Europe is in the Netherlands (EIA, Netherlands, International Analysis, n.d.).

In spite of not being a significant petroleum producer, Shell's presence and the capacity of the port of Rotterdam, allows the Netherlands to act as one of the major petroleum liquids refining and storage centers in Europe, (1.2 million barrels per day of crude oil refining capacity and 210 million barrels storage capacity of which 170 is in Rotterdam). Petroleum constitutes roughly half of the Dutch energy consumption, and for both oil and gas, Norway and Russia constitute the biggest sources of import(EIA, Netherlands, International Analysis, n.d.).

In spite of certain relatively positive programs to reduce emissions and investments on renewables as well as other domestic production capabilities, Netherlands is still predominantly relying on fossil-fuels. Fossil fuels constitute over 90% of the Netherlands' total primary energy supply (TPES) (IEA - The Netherlands 2014 Review, 2014 : 19). Furthermore, declining prospects from natural gas signal an uncertain future for the Netherlands' energy mix. According to the International Energy Agency; "the Netherlands remains one of the most fossil-fuel- and CO₂-intensive economies among IEA member countries ("Publication: Energy Policies of IEA Countries - The Netherlands 2014 Review, Abstract from Webpage" 2014)."⁵⁵ The Netherlands, had developed a pilot nuclear plant, but has not continued to develop new facilities. Therefore, given the circumstances, although the Netherlands and the Dutch public are very skeptical about the prospects of further developing nuclear energy, the option still remains on the table.

⁵⁵ International Energy Agency , Member country profiles, The Netherlands : <http://www.iea.org/countries/membercountries/thenetherlands/> accessed 17 January 2016, Retrieved again May 1, 2017: <http://www.iea.org/publications/freepublications/publication/energy-policies-of-iea-countries---the-netherlands-2014-review.html>

The situation is perhaps best described during the interviews, by a high level official who stressed that though there is no policy against nuclear, there has been little interest by anyone to invest in and develop the second facility. During the research, the researcher had the opportunity to visit Groningen Port at Eemshaven, see RWE coal plant, wind turbines, mixed fuel plant, as well as the site that was intended to be one of the possible sites for the second nuclear power plant. Therefore, though it is unlikely for the Dutch to develop a second nuclear facility, the elites in the interviews have not completely said it would never be considered in a Germany-like politics. The emphasis was instead to let the market determine what would be most economic.

The Netherlands has been the headquarters of one of the original “7 sisters” multinational oil companies, namely Shell. In fact, Shell has truly been multinational since its inception, and is often called an ‘Anglo-Dutch’ company. Shell, though dominated by Dutch management, has been the result of a partnership/merger in 1907 between The Shell Transportation and Trading Company from UK and The Royal Dutch Petroleum Company from the Netherlands. Both companies existed in the 19th century. Today the headquarters of Shell are in The Hague Netherlands, and the CEO is Dutch, Ben van Beuden. Interestingly however; “the parent company of the Shell group is Royal Dutch Shell plc, which is incorporated in England and Wales” (“Who we are,” shell.com, n.d.). Today, Shell’s Board, management, shareholders, and operations are a lot more multinational than many other energy companies. It didn’t need to enjoy the privileges of being a “national champion” like TOTAL, because it was and still is a multinational giant. In spite of continuously falling oil prices, Shell is the 5th largest company in the world (in 2015 was the 3rd) with highest revenue according to Fortune’s Global 500 (Fortune.com, global 500 (<http://fortune.com/global500/royal-dutch-shell-5>) “Royal Dutch Shell,” n.d., retrieved 2 May 2017). Being such a predominant company in global energy, Shell also trades oil and natural gas. However, there are other Dutch companies worth mentioning for their roles in the trade of natural gas.

GasTerra is indeed the first of such important Dutch companies selected for this research, in the trade of Natural Gas. GasTerra BV is an international company trading in natural gas. As a wholesale buyer, its operations are directed from its premises in Groningen. GasTerra’s operations are not restricted to the Netherlands, they operate on the European energy market

(“About GasTerra,” n.d.). Acting not simply as a supplier, GasTerra has also a strong purchasing and procurement function, in addition to sales. As a company from Groningen, they also constitute to provide an important portion of the supply of natural gas within the Netherlands.

And a third selected company of importance would be Gas Unie. Gas Unie specializes in the transportation of natural gas and ‘green gas’ in the Netherlands and certain parts of Germany. Furthermore, Gas Unie also has gas storage facility and a supply pipeline to the UK (“About Gasunie » N.V. Nederlandse Gasunie,” n.d.). These are some of the means by which the Netherlands acts as an energy hub, through the trading of these energy resources across the European market. All this is possible due to the colossal infrastructure available at the Port of Rotterdam, Europort.

These and similar companies are able to use the infrastructure and logistic capabilities available in the Port of Rotterdam and to a lesser degree the port of Groningen. The Port of Rotterdam is the largest port in Europe and among the largest in the World. But what makes it particularly unique and high-tech is that it has not only an immense capacity for cargo and container transport, but also for being one of the biggest energy hubs in the world. The port of Rotterdam has a length of around 40 kilometers, with 27,902 sea-bound and 100,000 inland vessels, and an annual throughput of around 461.2 million tons, in an area of some 12,500 hectares of land and water, of which nearly half consists of business sites (“Facts & figures about the port,” 2015). The port is special not only because of the energy resources that are flowing through it, but also due to the storage, refining, and actual energy generation facilities located in the port area, including coal-fired power plants, a biomass plant, gas-fired power stations, solar and wind power in the port (Factsheet- Port of Rotterdam Authority, n.d.). As such, the Netherlands undoubtedly has great importance for the European and global energy market. This is why it was an important case study country in this research.

Table 22. SWOT analysis for Netherlands

STRENGTHS	WEAKNESSES
• Domestic Gas and coal (until recently) in the North Sea, and Groningen Province. • Port of Rotterdam as major energy hub • Home of headquarters of Royal Dutch Shell • Historically a trading nation • Still strong industrialized economy • Very efficient economy in the EU • Has a functioning commercial nuclear plant	• Limited domestic Market, and vulnerable to the overall economic condition in the EU • Limited Domestic Energy Production Capacity other than North Sea and Groningen (which are being depleted) • Uncertainty about the future of EU • Very limited land: vast portions of its major cities are coastal or below sea levels, and also limited opportunity for developing new renewables. • territory at or below sea level, making the country's energy infrastructure at risk of rising sea levels
OPPORTUNITIES	THREATS
• Continued preeminence of the Port of Rotterdam including energy trade • Potential for the Port of Groningen to develop further • Opportunities in developing renewable in foreign assistance and international development • Continuation of key role in the Europeanization of its energy politics and deepening EU Energy Union	• Rising sea levels and global warming are a direct 'national security' threat to the Netherlands • Overdependence on regional and European economic growth • Past history of "Dutch Disease" makes it uncertain for future major economic changes

Considering the general strengths and weaknesses of the Netherlands, the first strength that comes to mind is the availability of local domestic resources of primary natural gas and coal. On the other hand, these sources are not only being depleted, but production is being decreased due to legal cases of the extraction causing social and environmental impacts such as seismic tremors (M. van E. Zaken, 2017). Secondly Netherlands is home to Royal Dutch Shell which is one of the most important MNECs in the world. However, in addition to trade, the Netherlands is an industrialized OECD economy and has considerable wealth and income from oil and gas. In the past, the Netherlands has experienced as a negative socio-economic condition known as “the Dutch Disease” as described in the below paragraph. Thirdly, the Netherlands is also home to the Port of Rotterdam, one of the most astonishing infrastructural and logistical port capabilities in the world. The Port of Rotterdam, and the growing Port of Groningen, has logistic capabilities that are amongst the most important components making the Netherlands a trading nation today, just as it was historically. Furthermore, the Netherlands is not merely a logistical base, it’s also a major energy trade center with the port facilities being major business clusters, and financial assets traded in stock markets. However, the overall economic stagnation following the global financial crisis still persists in the Netherlands, which is also a threat to the Dutch economy because the Port of Rotterdam and Dutch trade relies on the growing economic and trade activities in Europe, not just in the Netherlands. Finally, the geography of the Netherlands, with a low of altitude and below sea level reclaimed land with dikes, makes the country as a whole vulnerable against rising sea levels, and thus more sensitive about global warming (and arctic melting). As such, the Netherlands, though still undecided, doesn’t seem to ‘categorically’ oppose nuclear power as does Germany.

In terms of threat perception, it’s important to consider the institutional memory in the Netherlands regarding the “Dutch Disease.” The effects of the 1973 crisis have been so profound for the Netherlands that it left a mark that would be associated with the Netherlands. One other negative consequence of the 1973-1974 oil crisis was at the economic level on advanced industrial countries that did have abundant resources of energy; it is sometimes referred to as the “Dutch Disease.” The Dutch Disease, is a condition that an industrialized economy may suffer as a consequence of the “oil/gas’ curse. It’s a condition when an industrialized country unintentionally relies more and

more on the export of a single energy resource.⁵⁶ The term was coined so, because it has been first identified with the Netherlands and their discovery of the North Sea offshore energy resources (oil and natural gas). When Dutch found gas in the North Sea, there was influx of foreign currency which led to over-valuation of Dutch currency. This, in turn was leading to a subtle overdependence on energy exports, causing the industry to have less competitiveness due to the higher value of their currency, and in turn uncompetitive industry leading to higher unemployment problems. Thus, while nominally the country was getting more revenue, in practice, the industrial economy suffered from high currency levels and no longer being able to export competitive products.⁵⁷ This condition is seen in economies dependent on few or single commodity exports, and the remedy is economy's diversification ("Dutch Disease Definition from Financial Times Lexicon," n.d.).

As a consequence because the Netherlands experienced such a condition, this has been an important factor in their policy. Moreover, when the concept was explained first hand in Groningen, it was also a period when the global oil prices were high, and gas had not yet dropped as much as it would in the following couple of years. Therefore, with the knowledge of such an event, the notion that the Netherlands has been a "trading nation" has been a cornerstone of Dutch foreign economic policy. The experience with the Dutch disease has all the more solidified the importance of diversifying this trade in the minds of the Dutch policy makers.

Given the background of the Dutch economy and energy politics, de DMA and EGA type adjustments of the Netherlands varied from those in Turkey and France, with more emphasis on markets as well as the EU. However, the Netherlands's case for maintaining energy security is an interesting case to understand the Term Structure Approach. The way the successive governments of the Netherlands operate within distinct decision time horizons in designing foreign and energy policies intended to maintain energy security objectives are though more market oriented and more conscious about rising sea levels, they still have, in a way, surprising similarities with Turkey and France. Discussed in greater detail below, it can be observed through the concept of the "Term

⁵⁶ It may not necessarily have to be about energy, it could be about newly discovered gold resources etc.)

⁵⁷ This was several times discussed at Energy Academy Europe's EIRSS 2012 in Groningen. The following is a definition from The Economist: ("What Dutch disease is, and why it's bad," 2014)

Structure Approach to Energy Security” how the Dutch government’s capacity to respond to exogenous shocks within different time horizons display similarities to Turkey and France, less surprising in the case of the 2003 war in Iraq, and most surprisingly in the area of nuclear energy (or rather the wait and see approach, leaving it to the long-run). The background and observations to the exogenous shocks are discussed below.

5.2 Responses to exogenous shock: 2003 invasion of Iraq

5.2.1 Crisis background

The Netherlands, traditionally a trading nation, was also by tradition, a country that values collective security and international solidarity both in the NATO and EU settings. When the Netherlands had formally to make up its mind on whether to join the coalition led by US to invade Iraq in 2003, such elements as the traditional ‘loyal ally’ role, *Atlanticism*, solidarity after 9/11 and *realpolitik* were significant matters. The Dutch government was inclined to support the US-led coalition politically and militarily, and the decision in March 2003, to ‘support the war politically but not militarily,’ was clearly not the first preference of the government. Public opinion in opposition to the war explains the decision. Eventually after much debate, the Netherlands supported the first phase of the war politically, not militarily, and contributed troops to the second phase of occupation and stabilization. However, the Dutch government (led by Prime Minister Balkenende) was under increasing pressure from public opinion. In September 2002, 61% of the public agreed with the view that the US had other motives besides removing Saddam Hussein. The supply of oil was seen as decisive wish 33% (in two other polls this figure was as high as 52%). Eventually, support for a humanitarian mission on phase 2 also began to decline, because the mission lasted too long (Everts, 2010). The Netherlands, as a consequence, withdrew its forces in 2005.

The Netherlands sees itself traditionally as a strongly internationalist, and believes in multilateralism and solidarity. The three most important international institutions for the Netherlands are NATO for security questions, the EU for economic issues and the UN for other

global problems (including, of course, human rights, and peace operations). In line with its traditional pro-US orientation and its strong commitment to the UN, the Netherlands had not hesitated to fully support the United States by sending naval units in the 1990-1991 Gulf War and its aftermath, which was not disputed because there was a UN mandate.

In 2003, may European states like France and Germany wanted a UN mandate. Netherlands, on the other hand, was more ambiguous because 2002 elections brought an inexperienced populist party (LPF) to the coalition government. But the coalition collapsed and all decisions on Iraq were taken at the time of this domestic political uncertainty. The Dutch government supported the American position. United Nations Security Council (UNSC) resolution 1441 was welcomed and talks with US started, but the parliament was not sufficiently informed of the process. In January 2003, the Netherlands sent Patriot surface-to-air missile batteries to Turkey upon its request within NATO framework (With a parliamentary decision) in response to a potential missile threat from the Saddam regime (Everts, 2010).

Opinion polls suggested strong opposition to the war, and in February, 80,000 people demonstrated in Amsterdam, on the eve of the war (Everts, 2010).

The anti-war sentiments were further fueled by questioning the legitimacy of the intervention. The Davids Commission, which investigated the role of the Netherlands in the 2003 Iraq war, declared that the war was illegal. Furthermore, there also was the British Prime Minister's letter episode. The British Prime Minister Tony Blair sent a letter to the Dutch Prime Minister but asked this not to be archived. Commission said this was against diplomatic practice and a letter from a Prime Minister to the Prime Minister of the Netherlands before a war cannot be personal.

In light of the political atmosphere as described above, the Netherlands, unlike France, did not have significant dealings with the Saddam regime. By contrast, in the post-Saddam era, Royal Dutch Shell was one of the most active companies bidding for the development of new oil fields. Commercial interests vital to both Britain and the Netherlands are at stake in Iraq. The Anglo-Dutch company Royal Dutch Shell had just won a major oil contract in the Iraqi Majnoon field, defeating the rival French company Total. Majnoon is thought to be the largest oil field in the world. It may hold some 12.8 billion barrels of oil reserves. Shell will have a major stake in it,

alongside Malaysia's Petronas. Shell also has interests in the West Qurna Phase 1 field jointly with Exxon Mobil ("Oil, the Dutch Iraq inquiry on the Iraq war, and the missing letter - World Socialist Web Site," n.d.). Therefore, the immediate short term reaction of the Netherlands (originally in support of the occupation) was to explore and exploit the opportunities concerning new oil fields. Recent British parliamentary inquiry on Iraq suggests that both BP and Shell (although a MNEC, it is also a predominantly Anglo-Dutch company), with an effort of the British Government, were put on an advantageous position for developing lucrative fields in the post-Saddam era. Even though both BP and Shell won their respective oil fields under an international competitive bidding process that included other companies including Chinese companies, their interlocution with the British government prior to the occupation suggests interest in developing the lucrative oil fields in Iraq. As of June 2016, Iraq is the second largest OPEC producer of oil after Saudi Arabia (Blas, 2016). Considering the controversial 'private letter' between the British and Dutch prime ministers, criticized by the Davids Commission inquiring on the Iraq war in the Netherlands, the Dutch government's role suggests a strong direct support of EGA in trying to develop the oil. The exogenous shock in that sense for the Netherlands was the extended period of post-conflict occupation, rather than the actual occupation.

Furthermore, Royal Dutch Shell was keen to take part in the new oil fields in Iraq since those had been nationalized over 30 years ago, and the post-Saddam government would be licensing oil extraction rights from a country with one of the largest proven oil reserves. Shell's role in Iraq goes back to the days of the British occupation after World War I, when deals were signed that were to persist into the 1950s and the overthrow of the British-backed monarch. Still as an Anglo-Dutch company, the links between Shell and the British government remain close ("Oil, the Dutch Iraq inquiry on the Iraq war, and the missing letter - World Socialist Web Site," n.d.). Indeed, both BP and Shell won major contracts on oil fields in the immediate aftermath of the occupation (Boxell, 2005).

The Netherlands, along with the UK, had granted initial support to the War in Iraq, but withdrew militarily from the entire Iraq episode. However, even though the Netherlands withdrew militarily from Iraq in 2005, Royal Dutch Shell is still involved in significant energy related activities in Iraq. For instance, "in 2010, the Iraqi Ministry of Oil and Shell signed a contract to develop the

Majnoon oil field. Shell was awarded a 45% shareholding as lead operator and Petronas 30% with the remaining 25% going to the Iraqi State Partner (Missan Oil Company)” (“Majnoon Oil Field,” shell.iq, n.d., retrieved May 1, 2017). Another major project Shell is involved is the Basrah Gas Company (BGC), which was created to capture the flared gas resources that were by-products of the southern oil fields. BGC became operational in May 1st 2013, and it is described by Shell’s in the following words:

It is a 25-year joint venture with state run South Gas Company holding a 51% stake, Shell 44% and Mitsubishi 5%. It is a midstream gas project designed to capture, treat and monetise associated natural gas that is currently being flared in the license round 1 oil fields of West Qurna 1 (operated by ExxonMobil), Zubair (operated by ENI) and Rumaila (the largest of the three and operated by BP). [...] currently processing capacity in excess of 500 million standard cubic feet of gas per day (scf/d). In December 2014 BGC achieved a new processing record of 500 mmscf/d of gas and a new LPG production record of 2650 tonnes per day (“Basrah Gas Company,” shell.iq, n.d., retrieved May 1, 2017).

The interviewees, similar to the French interviewees also commented that there were considerable mistakes and misinformation regarding the decision to occupy. However, there was less overt criticism of the role the Dutch government played along with the British in support of the occupation, because the level of involvement and parliamentary inquiry commission had less available declassified or publicly disclosed information in 2012 than they had in 2017. The respondents whose answers were in the “other” category tended to attribute the war to other factors or were of the opinion that more than one factor were influential. This situation is once again perhaps reflecting the Atlanticist tendencies of the Dutch. But the elite response might have been different than the public reaction that occurred afterwards.

5.2.2 Policy makers’ and observers’ perceptions of problems and solutions

Of those who oppose this proposition, they are highest among the Dutch respondents. 5 out of 12 of Dutch didn’t believe that the war was because of oil, while only 3 supported or mildly supported the assertion that it was because of oil. However, it’s worth bearing in mind that these responses from the elite interviews, were for most part in 2012, which is after parliamentary

inquiries in Netherlands were published. However, the ones from other countries such as Britain were not in knowledge of as much information as it is available today. Although the inquiry commissions don't necessarily conclude that the war was because of oil, evidence nowadays suggests that oil was one of the considerations in the decision making. Furthermore, parliamentary inquiries suggest that the British government had discussed ways to put MNECs like BP and Shell in advantageous position in Iraq in the aftermath of Saddam Hussein (Blas, 2016).

5.2.2.1 Short Term Responses (markets): Laissez Faire

The convention that The Netherlands is traditionally a “trading nation” seems to be mostly validated through the interviews. The Dutch interviewees were also eager to differentiate the Upstream-Downstream difference of Energy resources. Under the ground they are common goods belonging to the society but once extracted they become commodities. As such, the Dutch government did not visibly make major market intervention in terms of DMA in the immediate aftermath of the Iraq war. The field interviews suggested that in the short term the responses seemed not to intervene, and let the multinational corporations operate as they would, and basing their decisions on economic motivations and conditions according to the global prices.

5.2.2.2 Long term responses (geopolitics): EGA (more apparent now by 2017).

As discussed above, recent evidence suggests that the Dutch government had a position similar to Britain in the early stages of the occupation, but quickly changed position since 2005. This, was perhaps because by 2005 Shell had already obtained major deals in Iraq (Boxell, 2005), which would be developed in the long term as EGA to consolidate the position of Shell in Iraq. If this is the approach indeed of the Dutch government, it is a prime example of how long term EGA set the framework and parameters within which the markets operate. Shell did obtain important deals as of 2005, and currently has advantageous position in major projects in Iraq both in the domain of oil

with the Majnoon oil field, and an important stake in the Basrah gas company (“Basrah Gas Company,” shell.iq, n.d., “Majnoon Oil Field,” shell.iq, n.d.).

It’s important to note that the field interviews do not confirm this apparent observation that Shell was in discussion with governments prior to the Iraq war and that oil was one of the considerations prior to the Iraq war. This was perhaps the case for three important reasons. First, the Dutch interviews didn’t reflect such a perception because by 2012 the parliamentary inquiries didn’t reveal such information until more recently. For example, a British report on the inquiry of the Iraq war, overseen by former civil servant John Chilcot; “doesn’t explicitly say oil played a role in the war, documents published on Wednesday show British officials discussed how to obtain “substantial business for U.K. companies” in the energy sector” (Blas, 2016). The two “U.K. companies” in question in the Chilcot report are BP and Shell (Royal Dutch Shell Plc is an Anglo-Dutch company). Secondly, it is because even the Chilcot report suggests that there was “gap between the efforts of British officials to win contracts and the companies’ conservative attitude” (Blas, 2016). In addition to the seemingly less enthusiastic BP and Shell, the third point of consideration is that these efforts to obtain substantial business was done by the British government, and not the government of the Netherlands.

The Davids Committee in the Netherlands had published its final report in January 2010, before the Chilcot commission in Britain. Field interviews were conducted at a time where a transparent committee that conducted public hearings had concluded that the government of then-prime minister Balkenende had engaged the Netherlands to an *illegal* war in Iraq by failing to wait for an UNSC mandate while citing maintenance of international order as reasons to participate in the occupation of Iraq (Nijman, 2012 : 78). Hence, by the time the interviews were conducted in the Netherlands, the Davids report had been published and the legality of the war was disputed. The Davids report clearly called the actual government decision to join the US-led coalition illegal in the sense that it was not compliant to international law (Socialistische Partij & Vliegenthart, 2010). Therefore given the recent unfolding of the event, it is understandable how the issue reflected in the interviews as a ‘mistake’ by the government.

There's not enough evidence suggesting that the involvement of the Dutch government in support of occupying Iraq in 2003 was because of oil, although arguably there are certain indications that could be interpreted as if oil was one of the possible factors. The interviewees certainly do not support such a claim as they seem to regard the decision as a mistake, and especially a mistake on the legality of the process. It's not known whether the 'private' letter between the British and Dutch Prime Ministers (Tony Blair and Jan Peter Balkenende) was a 'deal' that stipulated EGA-type adjustment in promoting long term involvement of Shell in Iraq. However, what is known through the Chilcot commission in Britain suggests that the British government was trying to secure lucrative deals for both BP and Shell. What is also known is that the 'unexpected' exogenous shock was the long-lasting instability in Iraq, which led to the withdrawal of Dutch military presence by 2005. Because of such instability, what was expected to take about 5 years for Iraq to produce oil in the levels of around 4 million barrels a day, in actuality took 12 years (Blas, 2016).

Hence, even though the data from field interviews do not support an EGA-type adjustment in the long term, Chilcot commission indicates that it shouldn't be a possibility that ought to be dismissed outright. In fact, future research may indicate either way; that the Dutch government was willing intervene for oil, or that oil was one of many factors but not the most important leading reason. Hence, this study does not conclude that the Dutch involvement was because of oil. However, and more importantly, what the Chilcot commission does indicate, for the case of the British government, is how a long term EGA adjustments such as the 2005 bids of BP and Shell had long term effects for both BP and Shell, but also for Netherlands and Britain. Therefore, this study understands that, either willingly or not (and with question marks as to the extent the Netherlands government reciprocated the British), the BP and Shell interaction with the British government is an example of how EGA-type adjustments demonstrate the way geopolitics shaped the markets in the long term.

5.3. Responses to exogenous shock: the Russia-Ukraine natural gas crisis of 2005/6

5.3.1 Crisis background

As a major exporter and hub for natural gas, The Netherlands was particularly concerned when the Russian-Ukrainian crisis erupted. This was a time when the reality hit hard the European Union, when it was realized that a great proportion of EU gas was supplied by Russia. And at least half of that gas, at that time, was passing through the Ukraine (map in Annex) (“Conscious uncoupling,” 2014). The North Stream gas pipeline from Russia to Germany was not inaugurated until May 2011 (Spiegel Online, Hamburg, 2011, retrieved 25 January 2016).

Though the Netherlands is an important producer of natural gas, it would make up for less than a fraction of the needs of the EU in the event of a sudden supply shock. Furthermore, technical issues (such as low calorific value the Groningen gas) would not be able to compensate for the loss (“Gas-rich Netherlands little help to Europe if Russia cuts supplies,” 2014). Overall, because the quality is different, and since its resources are depleting, the Netherlands would not be able to respond to the needs of the EU, being unable to increase its production (not to mention that in recent years, seismic movements caused precautionary scrutiny to reduce output).

Furthermore, Minister Kamp, the Netherlands Minister of Economic Affairs, announced in 18 April 2017 that there would be a further reduction in the gas extraction in Groningen, as of the next gas year, which starts on October 1, 2017. The new decision will reduce the production ceiling by 10 percent (Minister Kamp van Economische Zaken, 18 April 2017).

In light of the above, the Netherlands approach towards Russia is one whereby confrontation and threats should be avoided. Instead, the belief for a long time was that an active engagement policy towards Russia should be pursued. Furthermore, the Netherlands encourages the openness of Russian markets for investment and for securing access. The role of the EU should be to support Russia-Ukraine agreement (IEA, 2014).

Though there are variations according to individuals, one may agree that the position described above, more or less reflected the attitude of many of the interviewees; which namely focused on market access and mechanisms, but not on geopolitics. According to the methodological outcome expectations of this research, this situation seems to be an “un-typical” approach

because it was focusing on a market-based ‘economic’ policy to a political (geopolitical) event. Nevertheless, for anyone who follows the general preferences of the Netherlands, it would not be untypical for a trading nation. However, it may indeed have been the reason why Dutch and the EU approaches towards the Russia-Ukraine confrontations have not been successful as of today.

5.3.2 Policy makers’ and observers’ perceptions of problems and solutions

The replies of the Netherlands interviewees were slightly different than the general observation of the Dutch policy based on the research. The fact that the majority of the respondents were actually considering Russia using energy as a trump card indicated a difference from the reactions of policy makers who seemed to adopt a more balanced approach towards Russia. Furthermore, the Dutch interviewees were more optimistic that the EU’s policy was shifting in response to the crisis with Ukraine. In that light, one has to also consider that even if the Dutch policy makers in public would try to adopt a more balanced approach towards Russia. However, there were concerns with the growing tensions between Ukraine and Russia. Such tensions display the reduction of energy resources as political leverage rather than areas of cooperation. One interviewee (a high level official, Netherlands interviewee # 1, October 19, 2012, The Hague) indeed showed a video from YouTube that was apparently prepared by an official EU agency that compared the “energy threat” from Russia to the times of the anti-soviet propaganda in the 1950’s and 1960’s. He/She was very critical of a return to such Cold War mentality. The interviewee was concerned but like many didn’t anticipate the potential of the tension between Russia and the Ukraine becoming conflictual. Rather she/he was clearly stressing the need for greater confidence building mechanisms and cooperation with Russia.

5.3.2.1 Short term responses (markets):

The Netherlands, being a producer of Natural gas, didn’t feel the same level of concern as in East Europe, nor even as in import dependent countries such as France and Turkey. Furthermore, the interviewees seemed to take a balanced approach which argued that a ‘Cold-War – like’ security

dominated attitude against Russia would be both counterproductive and not effectively address the problem. In fact it was seen also as the fault of Ukraine, because Ukraine had diverted gas that was destined for the EU. The markets, once again responded in the Laissez Faire, attitude. However, in 2008 a series of incentive schemes to promote domestic investments on renewables called SDE was introduced (IEA, 2013). The fact that they were introduced two years after the first Russia-Ukraine gas crisis qualifies them as a short to medium-term policy adjustment.

Like many EU countries, the Netherlands also attempted to make new additional investments in domestic and renewable energy production in the immediate aftermath of the Russia-Ukraine crisis. The Netherlands on January 2008 introduced a subsidy called the SDE (stimulerende duurzame energie / Stimulating sustainable energy), that aimed at promoting renewables (IEA, 2013). However the scheme was not as robust as the feed-in-tariffs and renewables. Even though percentage of renewables in the Dutch energy mix increased over the last decade, the share of renewable in the Dutch energy mix remains modest. Furthermore, the austerity measures in Europe also prevented the incentives to become more robust until 2011.

5.3.2.2 Long term responses (gradual increase of domestic production)

In the long term, however, the Netherlands gradually attempted to increase some investments on electricity generation (wind, offshore-wind, biomass, and coal). However, the Netherlands to this day continues to have an energy mix dominated by fossil fuels. Most recent key data from the International Energy Agency indicates that only around 6% of the Total Primary Energy Supply (TPES) is from renewables, compared to the 10% average in other OECD countries (IEA, 2015).

Therefore, the longer-term response which is of EGA-type is what could be called as the Europeanization of its policy. However, the effects of this were more evident, as seen below, following the Economic crisis. At the time, the urgency was felt less to have an EGA-type adjustment since the Netherlands is a primary energy producer state, and interviewed Dutch officials were careful not to politicize the relations on gas with Russia. In fact, the examples of the criticism of the “Cold-War” type attitude was in response to this question during the interviews.

5.4. World economic crisis since 2009 and oil price fluctuation

5.4.1 Crisis background

As the home of Shell's headquarters, one of the first immediate consequences felt in January 2009 was the negative effects Shell felt when the price of oil had fallen from a peak at \$147 a barrel in July 2008 to below \$50 by January 2009 ("Shell hit by falls in oil price," 2009). This sudden fall of nearly \$100 per barrel in less than 6 months adversely affected all the investment and exploration agenda of major oil companies, and Shell was no exception. This had negative consequences on the economy and for employment. However, there was little action that any government could take in trying to reverse the overwhelming market movement downwards. This was mentioned by several of the interviewees in all the case countries, in that governments had little leverage to try and reverse price hike or falls in the short run. Furthermore many even questioned whether the OPEC still possessed such ability anymore.

In parallel with many of the media analysts, some interviewees also cautioned about the low prices hindering new investments, which in turn in a few years may again cause a rapid rise in prices because the necessary investments were not made ("Shell hit by falls in oil price," 2009).

Within a couple of months after the oil price had fallen below \$50, CPB the Netherlands Bureau of Economic Policy Analysis announced that the Netherlands is in a deep recession ("CEP 2009: Nederland verkeert in diepe recessie | CPB.nl," 2009).⁵⁸ Since then, the oil prices picked up and collapsed once again, while the Netherlands still continues to be one of the important economies in Europe, the economy to this date is not yet economically performing at the desirable levels.

5.4.2 Policy makers' and observers' perceptions of problems and solutions

⁵⁸ CPB: Netherlands Bureau for Political Analysis, The Netherlands is in a Deep Recession (17 March 2009) Full report in Dutch, Executive Summary available in English: <http://www.cpb.nl/en/pressrelease/329812/cpb-netherlands-deep-recession> Retrieved on 2 May 2, 2017

As for oil prices, 2 interviewees thought they were high in 2012 because of geopolitics, 2 thought they were low because currently artificial pressure and markets are low, and 5 interviewees said they were unable to predict or will remain unchanged.

Here, the interviewees and the overall research from publicly available information seem to overlap. The nuance is that the interviewees demonstrate a slightly higher concern about the role played by the speculators in causing such extreme volatility in the price of oil. As such, the fluctuation was seen as a market mechanism that fluctuated to extremes due to some “unnatural” intervention by the speculators, which had upset the markets’ normal cycles. While one of the interviewees mentioned that geopolitics was a very strong factor in influencing supply and demand, the overwhelming majority blamed speculators for manipulating supply and demand. Two of the very high profiled interviewees from the Netherlands suggested that rather than the actual price being extremely high or low, it was the extreme fluctuation that was more worrisome. Those interviewees suggested that it was stability rather than the price that would be a more important factor that needs to be sought. This emphasis on stability was not unique to the interviewees in the Netherlands, but in proportion to the number of interviewees, their numbers were more significant.

5.4.2.1 Short term responses (markets): seeking short term supply/solutions

The interviewees in the Netherlands also displayed a very strong inclination that the Energy resources are market commodities. Of the 12 interviewees, 9 openly said that that there were market commodities, while only 2 mentioned them as being National resources first, while one said it was both. An important distinction in the responses in the Netherlands was the distinction of “what the sources were while they were still underground”, and as to “how they should be considered once they were extracted from underground”. A couple of the interviewees mentioned the medieval tradition of “mining rights” of the sovereign or the community in deciding to grant the concession to mine; but that once the resources were mined, they would become commercial commodities that would be traded in the market for profit. This distinction

between the upstream and downstream based on mining rights were a clear distinction of the interviews in the Netherlands, and suggests how deeply rooted the pro-market tradition rests.

Furthermore, SDE incentives were hurt perhaps due to the economic crisis. The SDE scheme introduced in 2008 was ‘cost-effective’ and not very generous. They were compliant with the austerity attitude in the EU but were not environmentally effective, considering that they were effectively cutting funding from Renewables. Incentives on renewable energy investments became only more robust when superseded by the SDE+ scheme that began in 2011, and amended with increased funds annually (IEA, 2016b).

5.4.2.2 Long term responses (more domestic infrastructure and Europeanization of politics).

Following a period of austerity measures roughly from 2009 to 2011, in the immediate aftermath of the world economic crisis, in the long term, the Netherlands government has been further faced with reduced gas output from Groningen. Further reduction in the gas extraction in Groningen, announced in April 2017 would reduce as of October the production ceiling by 10 percent (Minister Kamp, of economic affairs (van Economische Zaken), 18 April 2017). This reduction is due to domestic legal decision on the allegation that the extraction activities caused seismic tremors. Even without the reduction, there’s eventual depletion of these fields. Therefore, in the Long-run the Dutch policy seems to be preparing to a transition whereby the role of Netherlands as an energy hub would be consolidated. This is visible with investments in the Port of Groningen and Port of Rotterdam facilities (as also personally observed during field studies). With strong port infrastructure the intention is to keep the Netherlands as an energy cluster, regardless of whether the energy is domestically produced gas or imported. Furthermore, with new unconventional shale gas and sand oil from the United States and Canada, the LNG facilities become even more important. This consolidation of infrastructure is a long term DMA-type response and very visibly observable in the case of the Netherlands.

A second long term approach that is of EGA-type response is the further ‘Europeanization’ of the energy policy of the Netherlands. The report by the Netherlands Bureau of Economic Policy

Analysis identified the economic situation in 2009-2010 as one of deep recession. In the English language executive summary of the report (“CEP 2009: Nederland verkeert in diepe recessie / The Netherlands is in a deep recession, CPB.nl,” 2009), it’s concluded that greater level international harmonization at the European level is essential to overcome the crisis. That in areas such as fiscal policy, harmonization of regulations and supervisions at a European level, coordinated EU-wide action is necessary to overcome this global economic crisis (“CEP 2009: Nederland verkeert in diepe recessie / The Netherlands is in a deep recession, CPB.nl,” 2009. Executive Summary in English pg.28). This report includes policies for the economy as a whole and thus, even though the energy sector is not separately addressed, it is assumed that the report’s policy analysis is inclusive of the energy sector as well. Either way, it’s an important document suggesting EGA-type policy adjustment in response to the global crisis. It also accounts for the increased ‘Europeanization’ of the Netherlands’ energy security and energy policy.

5.5 The 2011 Fukushima nuclear meltdown in Japan

5.5.1 Crisis background

When the Fukushima Daiichi disaster occurred, the public opinion across the world grew increasingly concerned about nuclear power. In the Netherlands, which doesn’t have a significant nuclear portfolio, the concerns were more about the facilities in nearby countries such as France and the Belgium. Therefore, the reaction in the Netherlands was more restrained, and instead of decommissioning the Borssele nuclear power plant, the government policy was to conduct stress tests at the power plant, and other smaller nuclear facilities across the Netherlands (“Fukushima | Nucleair Nederland,” n.d., retrieved 2 May 2017).

The future of the nuclear power in the Netherlands is unlikely “for now.” This has been a common theme identified both with the interviewees and with research. Unlike the German reaction, the Dutch have a more “wait and see” approach to see the future of renewables, gas, and their own public reaction.

The World Nuclear Industry Status Report of January 2012 juxtaposes the Netherlands and Germany one after the other thus allowing readers to see the difference of the developments. Accordingly; The Netherlands operates a single, 38-year-old 480 MW plant that provided 3.9 TWh or 3.6 percent of the country's power in 2011 (down from a maximum of 6.2 percent in 1986). In June 2006, the operator and the government reached an agreement to allow operation of the reactor until 2033 ("The World Nuclear Industry Status Report 2012 - World Nuclear Industry Status Report," 2012).

In 2009, the German utility RWE bought up Essent, which owns half of the reactor, but in January 2011 the Dutch Supreme Court blocked the planned ownership transfer after the other co-owner, DELTA, argued that the unit should remain in public ownership.

In February 2011 the Dutch government presented the parliament with a 17-page document outlining the conditions for new nuclear construction, including safety requirements and financial guarantees. The government wished to accelerate the decision making process to provide a construction license before the end of its term in 2015, and to see plant commissioning by 2019.

On 23 January 2012, DELTA announced it was putting off decision "for a few years" and that there would be "no second nuclear power at Borssele for the time being". The company provided the following reasons for its decision: "The financial crisis, combined with the substantial investment needed for a second nuclear power plant, current investment conditions, overcapacity in the electricity market and low energy prices (...)."

In early 2004, Borssele operator EPZ extended a reprocessing contract with AREVA NC. This is a curious decision considering that there are no possibilities in the Netherlands of using separated plutonium. Therefore, EPZ pays the French utility EDF to get rid of the plutonium.

A big controversy at the local level in the Netherlands was that a pension fund Dutch ABP had invested into TEPCO, the operator of Fukushima, and decided to eventually sell its stake over safety concerns ("Dutch pension fund sells stake in Fukushima operator over safety concerns," 2014). Ironically, the decision was not in the immediate aftermath of Fukushima, but a couple of years later.

5.5.2 Policy makers' and observers' perceptions of problems and solutions

The Netherlands, having only one commercial nuclear power plant and a scientific reactor, had a plan to have a second reactor.⁵⁹ However, Fukushima had a psychological effect and the attitude has been not to proceed for now. Still, most interviewees are not in same opinion as German government and say that it is only a temporary stop to wait and see, and not to completely abandon it. While 4 interviewees gave varying degrees of support, 2 objected to it, and yet 6 took a middle ground as to how it was over for now or that it had plusses and downs (leaving the door open for the future).

Among the technologies considered as most promising, offshore wind was the main issue in the Netherlands among renewables as the country is not geographically suitable for hydro-electricity and too small to invest in on-land wind turbines. Therefore, the offshore wind was seen as an interesting and promising new venue of development for domestic energy. Responses of the interviewees from the Netherlands were interestingly different from expectations in the case of the nuclear energy. It would be fair to say that there was visibly less support from the interviewees in the Netherlands. But the general response was more neutral or slightly more supportive of nuclear energy than the expectation. As the interviewee most difficult to reach said, the general prospect of new nuclear energy investments in the Netherlands can be summarized as nuclear energy in the Netherlands being over, 'for now' (Netherlands Interviewee # 11, 12 November 2012, The Hague).⁶⁰ Many respondents in the Netherlands, while not supporting nuclear energy, did not outright oppose it either (Appendix 4), (unlike the case of Germany). As such, the elites are not closing the door to the possibility of eventually developing another nuclear plant in the future, once there would be less natural gas output and the public opposition to nuclear energy may, in time, change.

⁵⁹ One of the possible future sites envisaged for a second nuclear power plant was seen as part of a site visit to the Essent plant and Groningen Port (Eemshaven, Groningen Province), as part of the EIRSS 2012 program.

⁶⁰ This was actually said by several of the interviewees.

5.5.2.1 Short term responses (markets): making more robust scheme for renewable energy incentives

An immediate observable policy change that corresponds to the immediate aftermath of the Fukushima disaster is the introduction of more robust subsidies/incentives scheme for renewable energy to increase investments and providing additional ‘bonus’ in addition to special rate. The program is directly administered by the Netherlands Ministry of Economy (IEA, 2016b; Netherlands Enterprise Agency, 2017). Though it could be argued how much of an impact they had, the fact that they were introduced is important because the date of the change from SDE to SDE+ corresponds to the aftermath of Fukushima. It’s difficult to ‘measure’ the impact Fukushima had on the decision to introduce more robust SDE+ measures. However, public opinion as reflected to the media, the decision to not pursue a second nuclear power plant for the time being, field interviews, and other on-site research conducted in the Netherlands in the immediate aftermath of Fukushima suggests a greater awareness and desire to use renewables. Programs, such as the one on energy transition attended for this research, and other similar ones by major Dutch universities in the summer of 2012 also is an indication of such awareness. Hence, though the impact is questionable, a DMA-type short term policy was introduced to boost and supersede the previous one (from SDE introduced in 2008 to SDE+ in 2011). It’s a short term policy because the Ministry of Economy reviews policies and rates on an annual basis.

5.5.2.2 Long term responses (geopolitics): EB/IB (more observable)

Dutch in general seem more ‘conscious’ (or concerned) about climate change and this is actually stemming from the country’s geography (geopolitics). Rising sea levels are threats to the port of Rotterdam, as well as Port of Groningen –Eemshaven in the event of a need to substitute Rotterdam. During the field research, the Port of Groningen– Eemshaven facilities, the wind turbines as well as the RWE Essent power plant were visited as part of a field trip. In that respect, the discourses on ‘Critical Geopolitics and the Arctic’ may resonate more attention in The Hague than in Paris or Ankara. With global warming, and increasing melting of icecap in the Arctic

region, attempts increase to exploit offshore resources in arctic regions becoming relatively more extractable. Issues over jurisdiction and Exclusive Economic Zones are increasingly becoming contested. According to more critical approaches, the term geopolitics may inevitably reflect an association between power and interests, strategic decision-making and geography. Øyvind Osterud, who is a scholar associated with ‘critical geopolitics,’ suggests that geopolitics relate political power and geography (Østerud, 1988). With rise of China, the center of geopolitical gravity is moving to North and the East, i.e. Eastern Eurasia. Thus, Osterud asserts that the “High North” Arctic should be analyzed by taking into account these shifting coordinates (“GeoPolitics in the High North,” n.d.-a).⁶¹ This balance between globalization and geopolitics (i.e. between cooperation and power rivalry) changes over time and works out differently in various parts of the world. Arctic is a field of tension between contradictory forces (i.e. more geopolitics than globalization.). One recent setting where global powers have competed over geography and natural resources has been the Arctic.

Michael Mayer, further discusses the “search of conceptual clarity” and argues that “The concept of Geopolitics has been constantly under revision, without a clear and commonly agreed idea of what it implies.” He points out that “Kissinger had defined geopolitics as trying to find equilibrium (balance theory): Russia, China, India and US must be acting to balance each other in the region” (“GeoPolitics in the High North,” n.d.-b).

Strategy is also a crucial factor and one of political significance. And since geography is related to it, some scholars prefer to use the term ‘geostrategy’ rather than geopolitics. During Cold War, strategy of containing Soviet Union was meant to prevent the falling of dominoes. So Southeast Asia became geopolitically decisive. Similarly, it is argued, that geopolitical relevance of the Arctic will be determined by perception of states of their strategic interests rather than the qualities of the region. Even though the North Sea has resources and English Channel is a choke point, few people discuss the geopolitics of these locations, because they are not contested regions and

⁶¹ The GeoPolitics in the High North research programme is to develop new knowledge about actors and their interests in the High North. The programme is led by the Norwegian Institute for Defence Studies, and consists of a core group of Norwegian and international partners, http://www.geopoliticsnorth.org/index.php?option=com_content&view=article&id=45%3Aarticle2&showall=1 (accessed 16 January 2016)

therefore do not have geopolitical relevance. The Netherlands, as a maritime trading nation, and with a shore to the North Sea, is concerned about the implications of the high north for its maritime trade as well as resources, and its environmental security.

The Arctic has of course a promise of future: rich resources and transport corridors. Russia is a dominant actor in the Arctic as the longest littoral state to the North Pole. But Russia is also engaged with managing European relations, and is active also in the Caucasus, in the Middle East (Syria) and securing gas supplies from Central Asia, and in the Far East Pacific region.

The Term Structure Approach would understand an alleged contradiction (dichotomy) between globalization and geopolitics as a false one (opposite of what Osterud argues in the first article). The military-economic competition (which fuels geopolitical reasoning), incorporates the processes of globalization. This is where states and non-state actors compete. States take these (global) trends into account, for strategic gain. In many of today's bilateral strategic relationships, non-state globalization processes, state corporations and national economic policies interact in complex ways, i.e. are relevant. This is pertinent to this research because the "Term Structure" Approach to energy security also believes that the geopolitics and globalization are not dichotomous. On the contrary, they are interrelated but operating in different timeframes, with one setting parameters and the other operating more in a day to day basis. They don't contradict each other, nor do they operate independently from one another.

This is where "Mackinder's Heartland Theory" re-enters the picture: The heartland theory argued that controlling Eurasia (heartland) was source of world power because rail networks allowed the efficient extraction of the region's raw materials, and at the same time protected them from adversarial maritime powers (Bassin & Aksenov, 2006). Hence, Eurasia heartland was not useful automatically, but it was useful because of the strategic resources and geographic advantages that it provided. Today, one should look at the sources of national power: demographics, economic strength, technological advantages, state structures that allow for efficient use of national power (including military power) etc. Tomorrow's heartland may lie in the Arctic, or South Asia, or Africa, under the oceans, or even in outer space; depending on the features of the current strategic environment.

Royal Dutch Shell, was one of the companies interested and actively involved in Arctic oil exploration, in spite of much public opposition. In the short and medium-term, oil prices will no doubt have an effect on the contest over the Arctic. The current price levels make it in the short to medium term less likely for oil companies to invest into offshore arctic explorations and extractions of new resources. And the decision by Shell to stop Arctic oil exploration due to economic reasons is an example how market factors are very influential forces in the short to medium term (Krauss & Reed, 2015). This, however, in the longer geopolitical framework, does not preclude the region being once again hotly contested if the prices were to go up again over the next decade for several reasons, and chief among them is the continued reliance of Netherlands to its role as an energy trade center.

5.6 Conclusions: term structure approach matters because in short term there's DMA adjustment, and long term both DMA and EGA

The Dutch respondents were the ones who were most supportive to the prospect of developing Renewable energy. This may be because surprisingly fossil fuels still dominate the energy mix of the Netherlands. Like most interviewees from other countries, the Dutch respondents also identified Wind and then Solar as the ones with most prospects. However, half of the Dutch interviewees drew attention to the role of geography in being an influence. That States would not easily have preferences, but that they would be limited by their geographic features. For a small country like the Netherlands which is at sea level or below sea level and where it rains a lot, the options would be limited according to many of them.

In general, the Dutch seem more concerned about the ability to access resources and having market stability than the geopolitics per se compared to the other case countries. This is apparent in the perception that raw materials and energy resources are 'International Public Goods' (IPGs). The lines of access supplying these materials to the global markets is key (M. van A. Zaken, 2014). This was also a clear indication during the interviews in the Netherlands with many interviewees emphasizing the role of trade and economics for the Netherlands. The legal

perspectives also offered on the process and proceeding of energy trade and contracts is another area where the interviewees from the Netherlands offered valuable outlooks.

Table 23. The Netherlands' reactions to Exogenous Shocks as DMA and/or EGA

DMA = Domestic (i.e. Internal) Market Adjustments EGA =External Geopolitical Adjustments.

	<u>E.S.1:</u>	<u>E.S.2:</u>	<u>E.S.3:</u>	<u>E.S.4:</u>
	Iraq Invasion2003, including prior diplomatic escalation at UNSC and subsequent rise in world oil prices	Russia– Ukraine Gas Crisis 2005/2006	Global Economic Crisis 2009 and extreme Oil Price Fluctuation	Fukushima Nuclear Disaster 2011
NETHERLANDS	EGA with lag:	EGA:	Not at first:	No 2nd nuclear plant
	Netherlands' initial support to USA, later Europeanization of Security	Europeanization of Energy Security;	Shell is MNEC and port of Rotterdam is major hub	EGA: (New import options: i.e. Shale Gas from USA).
		Netherlands wasn't that affected didn't want to blame Russia.	Seismic activity of Groningen	EU solidarity,
		Some DMA: certain new plants were built	DMA: renewables EGA : Europeanization.	

The perspective of the interviewees on the legal process reflects some key public policy emphasis of official discourse. The Netherlands, as a country that emphasized trade, puts in priority the formal institutional settings in establishing 'framework' for stable and secure trade. In terms of legality, the signing of the charter is seen as a first step for countries wishing to join

the Energy Charter Treaty. By signing the treaty, investments made by companies in that country enjoy legal protection, reducing the risks for the companies concerned (M. van E. Zaken, 2015). The emphasis of ‘legal protection’ to energy contracts as pointed by the ministry of economy reflects the field interviews, and especially those that also underlie the role of legal framework (for example legal perspectives were emphasized by; Netherlands Interviewee # 5, 12 July 2012, Groningen).

A seeming contradiction, however, is that the Netherlands supports environmental measures in international platforms but has a much smaller than expected portfolio of renewable energy in its energy systems. On one hand the Netherlands is very active and involved in environmental politics due to its geography and low altitude (making rising sea levels a direct threat). However, the primary energy mix of the Netherlands is still dominated by fossil fuels. Even though the high share of fossil fuels is in most part due to the Netherlands acting as an energy hub, if one takes the shares in energy generation, it can be observed that fossil fuels are still high. For example, in electricity generation, 37% of electricity in the Netherlands is still produced from coal-fired plants, by contrast only 14% from all renewable sources combined (IEA, 2015). This is seemingly incongruent with the efforts at the international and European level to support environmental measures such as to reduce carbon footprints and the Paris COP21. Though renewables and incentives for renewable energy investments have been developing since 2008 and even more so since 2011, they are below the OECD average. And this may not easily change, because the apparent policy is to have long term DMA by strengthening the energy cluster in the port areas to consolidate the role of the Netherlands as an energy hub and energy trade center, regardless of whether it’s produced or imported; which makes perfect sense for the Netherlands as a trading nation. In the long-run, the policy of the Netherlands in terms of EGA, and especially since the misadventure in Iraq, has been to further show solidarity with the EU, EU policies, institutions and the Energy Union.

Even for a ‘trading nation’ like the Netherlands, the ‘Term Structure’ approach matters because of the need to also develop policy to reduce vulnerabilities through external balancing and internal balancing. In the long term, especially due to the environmental concerns, one can observe a

concern about geopolitics as well, although the emphasis is more on short to medium term markets and availability of resources for the market.



CHAPTER 6

FINDINGS AND COMPARATIVE CONCLUSIONS

The main case, Turkey, is observed as aspiring to become a major player in world energy trade and politics. But in addition to such regional aspirations, Turkey, like the other case study countries, is also adjusting its policies in the face of exogenous shocks, in order to maintain its energy security. In this respect Turkey, like the other case study countries, addresses both their short term economic sensitivities but also their long term vulnerabilities through a policies of DMA and EGA.

In the long term, Turkey is aspiring to become both an energy trade center, and a hub, as well as developing civilian nuclear energy. Turkey is aspiring to become an energy trade center in the long term (which is a long term DMA) in addition to being a logistical hub. In that respect, the case-study of the Netherlands represents a very relevant case as an energy hub and trade center. The port of Rotterdam is not merely a logistical giant, but also a very important business cluster and trade center, reinforced with the facilities used by a giant MNEC such as Royal Dutch Shell. Turkey, at present, doesn't possess a comparable logistic capability, nor is considered an energy hub and trade center like the Netherlands. While Turkey needs to make infrastructural investments to become an energy hub, and to provide incentives to attract investors and businesses as an aspiring energy trade center, Netherlands makes considerable investments to increase the capacity of the Port of Rotterdam in order to consolidate its leading position in Europe.

Turkey is also trying to become in the long term more reliant on domestically generated civilian nuclear energy as source for baseload electricity generation. France, in that respect represents a relevant case of civilian nuclear energy. However, because Turkey collaborates with Russia (in Akkuyu), with Japan and to a lesser degree France (in Sinop) and potentially with China or an

international consortium (possibly US company Westinghouse and solution partners),⁶² Turkey's efforts in the domain are considered as EGA (because it's an alliance type behavior), whereas France, which has its internal technology, its development of a nuclear power plant is mostly considered DMA (even though by its nature nuclear energy always carries a strategic context). Besides, for France the policy context of civilian nuclear energy is in multilateral platforms (such as COP21), as well as developing bilateral relations. While France is an example of use of civilian nuclear energy, because it has its own technology, Turkey doesn't possess such an indigenous technology and therefore this differentiation should be noted in the analysis.

It is observed that all three case countries are valid examples for understanding the Term Structure Approach to energy security. All three have long term and short term adjustments of both DMA and EGA. But in the long term, it can be observed, similar to a Neoclassical Realist outlook, that geopolitics set the framework within which markets operate. At first glance, it may seem that Netherlands' case represents a counter argument in that, the markets operate to set the courses both in the short and long term. But this research observed and identified through interviews that the Dutch elites were not willing to perpetually oppose nuclear power, nor decommission an existing power plant, possibly due to climate concerns. It is deduced that, because of the geography of the Netherlands, and of the vulnerability of the Port of Rotterdam, as well as major cities like Rotterdam and Amsterdam to rising sea levels caused by global warming and greenhouse gas emission, zero-carbon emission baseload energy sources (such as nuclear) were not precluded. Thus, in the really long term, climate and geography define the structure in which markets operate, even for Netherlands. And that is a perfectly reasonable explanation why Netherlands, unlike Germany, doesn't categorically oppose nuclear energy.

Similarly, North Stream II seems to represent how markets at the end of the day dominate geopolitics, but in essence, it has also a geopolitical connotation. Other than lower prices of gas accompanied by the sanctions regime causing economic difficulties to Russia, Europe is also feeling less vulnerable towards Russia with the availability of alternatives from the Southern Gas

⁶² I had the chance to personally confirm this with the Vice President of Westinghouse in Istanbul during the World Energy Council, that Westinghouse evaluating, the possibility to be involved with the 3rd nuclear power plant in Turkey, through its international solution partners.

Corridor, as well as the potential gas from EU-member Cyprus (Greek Cypriot Administration) and non-EU members Israel and Egypt which are also discovering considerable reserves in the eastern Mediterranean. Furthermore, the growth of LNG, and the availability of considerable shale gas resources from the USA (to be transported through LNG vessels) also are in essence EGA-type developments that further help EU countries like France to be less vulnerable and to maintain energy security through diversified external sources.

Hence, all three cases, Turkey, France and Netherlands, are examples that could be understood through the Term Structure Approach. The original approach offered in this research proved to be particularly useful in assessing the unique ‘nuclear partner country diversification’ approach of Turkey. This is an important observation made by few researches on Turkey’s nuclear energy, and even fewer researches present an original conceptual understanding for assessing the motivation to maintain energy security for a country aspiring to develop and diversify civilian nuclear energy, like Turkey. It was stated by the then-energy minister Hilmi Guler in 2004 (DOĞAN, 2004) that Turkey could backtrack from the July 2000 decision by the Ecevit coalition government to not pursue nuclear energy (NTVMSNBC.COM, 2000), and concrete steps on developing an actual nuclear plant and signing of an IGA with Russia was as late as May 2010 (World Nuclear Association, 2017). Because the IGA was signed before the Fukushima disaster, it’s seen mostly as a response to maintain energy security following the 3 earlier exogenous shocks. Nuclear energy, albeit civilian, still has a strategic context and is identified with prestige in addition to the economic need to supply baseload energy to the Turkish Economy. However, because Akkuyu Nuclear is a Russian owned company, subsidiary of Rosatom, it’s not necessarily a domestic supply but an EGA-type adjustment.

In the interviews, there was, surprisingly, relatively little opposition to nuclear energy among the elites, as well as in the government. In addition to the archival research, this trend was verified by the field interviews. However, the reasons for not opposing nuclear energy varied in all three, and were not necessarily, nor predominately EGA-type measures in France and Netherlands. For Turkey, civilian nuclear energy is a source of prestige, but factors such as regional strategic circumstances as well as geopolitical concerns due to regional countries developing nuclear energy also make it a priority for Turkey. For the Netherlands, there’s a standstill for the time being and a

lack of permanent opposition. Environmental and geographic factors (arguably another geopolitical factor) are a reason why the possibility of developing again in the future is not precluded in the Netherlands. France, on the other hand, is a dominant country in nuclear technology, and is involved with developing nuclear energy in other countries, including activities for the consortium in Sinop, Turkey (World Nuclear Association, 2017). France shares its nuclear expertise even with countries that are very advanced with nuclear technology, such as the USA and Russia (AREVA, 2016; “EDF in Russia and CIS,” 2016). While for France, the domestic nuclear investments are DMA-type adjustments, through IGA’s and exports have a strategic implication. France’s still, in spite of considerable nuclear use in electricity, reliant on the import of fossil fuels. In that respect, a remarkable ‘achievement’ for France in the aftermath of Fukushima, is the general acceptance of nuclear energy as an option for contributing to global energy supply security, as well as for achieving emission targets, such as in Paris COP21.

An important difference between Turkey on one hand, and France and Netherlands on the other, is the ‘Europeanization’ of energy security policy. While both France and Netherlands, as members of the EU have further options through an integrated EU market supplied from diverse sources, Turkey has assumed a different role to maintain its energy security. This is because Turkey is not an EU member and membership does no longer seem to be even on the horizon, while France and Netherlands are EU members and elections in both countries in April and May 2017 solidified pro-EU governments.

The above summarized findings would be discussed with more detail in the sections below, demonstrating the added value of the Term Structure Approach to Energy Security.

6.1 Discussion of findings from interviews.

The dissertation tried to identify and analyze if countries opt for geopolitical solutions or market mechanisms in response to historic events. The time period covered in this dissertation spans the decade from 2002-2012, and discussion continued until May of 2017 in order to provide examples of recent developments.

The hypothesis of this dissertation is that, while both market and geopolitics are very important, however, because they operate in different timeframes, it is geopolitics which set a strategic framework and market operates within this framework. Political (*Geopolitical*) responses to events include measures, such as building new infrastructures that span over a geography, like BTC and TANAP. These were often identified as EGA and were observed to have more medium to long term effects. Although both projects were initiated due to the strategic inclinations of the participating countries, the actual investment, management and operation of these mega-projects significantly involve private companies. The product transported (oil or gas) is sold as a market commodity. Thus, the geopolitics provided the strategic context and the framework upon which the market operates. This was why it was important to make not only a distinction between DMA and EGA but also an intertemporal analysis. As a corollary hypothesis, the strategic context to build infrastructures as a measure to geopolitical events is a form of DMA, akin to the term ‘internal balancing’ by Taliaferro) (Taliaferro, 2006). But under certain conditions (such as involving an ‘intergovernmental agreement.’) they may also reflect elements of ‘external’ balancing. They are first considered ‘internal’ balancing because by realizing these new facilities and infrastructure, they change the balances of energy security through internal means. But such projects are arguably also reflect EGA type measures if they also involve a group of states collaborating and emulating alliance-formation behaviors (as in BTC and TANAP projects).

Consequently, these investments change the vulnerability in a country or region’s energy security. Furthermore, because decision to build these infrastructures requires a strategic context, which channels private investments and market forces, it is principally dependent upon a political ‘geopolitical’ framework, (or an EGA-type adjustment). Of course, without the intersection of government policy and economic feasibility (a critical factor for market mechanisms to operate), such investments can hardly be realized. Therefore, the answer to the question which aspect predominates energy security is “both” but at different times.

Turkey, France and Netherlands are also most different in their stages on nuclear energy (over-dependent France, little in the Netherlands, and non- but ongoing project of first power plants in Turkey). This would allow seeing difference in the DMA/EGA policy actions in the face of the

‘critical events.’ For example, Turkey, the main studied case country, is an ‘outlier’ when it comes to the reaction to nuclear energy following Fukushima, in the sense that the decision to proceed with new projects was taken after Fukushima. The Netherlands decided to hold for now, while France continues to finish those under construction while decommissioning the oldest facility. Turkey’s position as an outlier could be better understood because there’s no commercial grade nuclear power plant in Turkey, and there’s a desire to develop nuclear power for reasons of prestige as well as low-emission baseload energy. Though not mentioned in the interviews, but expressed by the Minister of Energy Guler as early as 2004 (DOĞAN, 2004), there’s also a motivation by Turkey to develop nuclear energy for providing baseload energy to supply, and also because it’s developed in other countries around the World. Furthermore, there are also other countries of the Middle East region (most notoriously neighboring Iran) that are developing nuclear energy.

The emphasis on prestige is an important consideration and had been expressed first hand by senior parliamentary advisers during seminars and the certification training program at EIF 2013, (24-25 October, 2013, Ankara).⁶³ The role of prestige has been further re-confirmed in a recent first hand conversation with Turkish government officials in January 2017 (Rep. of Turkey, Ministry of Foreign Affairs, 2017).⁶⁴ Furthermore, one of the interviewees in Turkey (Turkey Interviewee # 17, May8th, 2012, Istanbul) expressed her/his wish that Turkey had already developed nuclear energy several decades ago so that Turkey would be discussing [like France] which one to decommission. These comments indicate a sense of both prestige and necessity to have uninterrupted baseload electricity supply. These are characteristics of long term DMA (and of internal balancing) and capacity building, however because the action involves collaboration with another country, and because the ‘competitive tendering’ processes had failed, the policy action for nuclear energy in Turkey can be perhaps better described as long term EGA.

⁶³ The researcher participated to the EIF 2013 “Training in Energy Market Legislation,” certification program on 24-25 October, 2013 in Ankara, and witnessed firsthand to such comments by the speaker (a parliamentary legal advisor) on the role and prestige of nuclear energy similar to high-tech space technology.

⁶⁴ The discussion was on January 9 during in-person meetings in Ankara, Turkey with anonymous officials who were attending the 9th Ambassadors’ Conference 8-14 January 2017.

However, market forces operate more visibly within a short-to-medium term timeframe, while, intuitively, investments require a long term policy vision. Overall, countries are trying to pursue DMA (internal balancing) or EGA through intergovernmental energy agreements (which is arguably external balancing as being a form of alliance) and try to modify their energy mix and maintain energy security towards their favor (by improving their energy mix and sources of supply). However they, unless funded by the governments (as it is the case with Akkuyu), projects resulting from a competitively bidding process still need to realize investments mostly with funding and finance obtained within the Neo-Liberal order. As such, they are indispensable towards one another, both to understand energy security and to shape future policies. The results of interviews, in all three case countries in certain ways were compatible with this understanding of DMA and EGA to maintain energy security.

6.1.1 Summary of the interviews

For the purpose of better understanding the general policy from the agency level, 38 elite interviews (there were 37 persons, and one person was interviewed for two different case study countries) were conducted with 2 categories of people, practitioners and observers. Practitioners were government officials as well as in staff in international organizations. Only one of the practitioner interviewees at the time of the interviews was a recently retired official, others were still in active duty. Observers were academicians, journalists, experts in policy institutions, NGOs, or private company executives. Views expressed are their own and not their institutions’.

6.1.1.1 Election years

The field research and interviews were conducted in a 13 month period when all 3 of the case study countries had general elections. While incumbent prime ministers retained power in Turkey and the Netherlands, in France there was a considerable change of power.

6.1.1.2 Practitioner / Observer

There were many interviewees whose category overlapped or had changed in recent years from government to academia or vice versa, or were in institutions closely associated with the government, or from government to IO, academia to IO. The line of categorizing an interviewee as an observer and practitioner was not always clear-cut.

6.1.1.3 Participation

Of requests for interview from nearly 50 people, 37 were successful. Approximately 3/4 of those contacted agreed to participate. The most accessible was the Dutch Government, while people from the French and Turkish government institutions were a little more reserved, and insisted a lot more on the issue of anonymity. Interviewees in the French government were lower in the hierarchy than their counterparts in Turkey and the Netherlands. Also, one has to take into account the fact that the researcher is from an established institution in Turkey with an existing network of contacts was an important factor in accessing high-level interviewees from Turkey.

6.1.1.4 Anonymity

Anonymity was an issue with government related officials in all three countries. There is no distinction per country in this domain. Many officials were reluctant because they were worried that what they said could be interpreted as being incongruent with the official policy of their ministry, or that it could be miss-interpreted.

Many government interviewees in France, the Netherlands, and in Turkey repeatedly avoided the interview. For some cases, after making numerous phone calls and sending countless e-mails as reminder, it became clear that (s)he did not want to go through an interview process but out of courtesy could not refuse as (s)he had already promised to help.

It was extremely difficult to secure an interview with some of my interviewees, in some cases it took almost 6 months, dozens of e-mails, phone calls and countless re-scheduling. One in particular was extremely hard to convince.

Two interviewees actually had a major dispute during a conference/workshop due to their different views. And one interviewee had also had a dispute during the conference with some of the participants and organizers. But all were kind enough to agree to help with the research, and the researcher is extremely grateful to each and every one of them.

More interesting, however was that many interviewees who were private sector executives insisted on anonymity as well. This is thought to be the case because of issues of personal liability. That may also be an issue why unfortunately the top two energy multinational corporations in the Netherlands did not accept to participate to the research.

6.1.1.5 Interview in times of economic downturn

Interviews took place in a period of 1 year when the price of oil was mostly above \$ 100 and yet most European economies were experiencing serious economic crisis since 2009. By the time the dissertation was completed in early 2016, the global economic recession had still not fully ended, and the price of oil had momentarily dropped to below \$ 30 a barrel. This study, based on interviews conducted in a period of time under conditions of “depression economics” would have had important effect on the expectations of the interviewees. New interviews would likely change the expectations and outlooks of the experts to be interviewed then.

The Interview questions were the same to all interviewees but were open ended and semi-structured. They directly aimed to ask about the critical historic event such as The Fukushima disaster:

- a) Nuclear Energy is? (Your opinion on nuclear energy especially since Fukushima)
- b) Of the Renewable Energies, which ones are the most promising?
 - a. Solar

- b. Wind
- c. Hydroelectricity
- d. Bio-Fuels/Bio-Mass
- e. Geothermal
- f. Other

These questions also helped me making analysis at the theoretical level on both what the Interdependency of Neo-Liberal Theory (Nye, 1987), and also the Neoclassical Realist notion of internal balancing (Taliaferro, 2006) would be on such nuclear, environmental and renewables related issues.

6.1.1.6 Feedback from interviewees

Some interesting feedbacks from interviews were instrumental in formulating the conceptual approach in this dissertation. Many interviewees made the difference in the upstream and downstream in energy industry.

6.1.2 Concluding discussion of findings from interviews

A common remark (in 7 interviews, see Appendix for details) was that “the era of cheap oil was over.” Hence there was a strong expectation that the price of energy and of oil in particular would be in an upward trend in the long run. Such was the expectation, but in January 2016 the price of oil reached levels below \$30 per barrel. It would probably be unfair to say that the experts made misjudgments, but assumptions were probably based on peak-oil been reached already.

In the dissertation, the main hypothesis would argue that it is unlikely to obtain absolute energy security, yet geopolitics set the scenes in which markets operate. Hence it is an understandable policy that could be identified through the interviews; while operating within the Neo-Liberal global economic order, countries are trying to pursue internal balancing or to invest to ‘modify the

structure.’ The interviews seem for most part to re-confirm the importance of geopolitics in setting the rules of the game, hence countries trying to readjust geopolitical advantages. Nation-states often pursue policies that balance reliance on geopolitics and market mechanisms in order to ensure energy security. The interviews also seem to support that while geopolitics set frameworks, in the day-to-day basis, it seems as if market prices generally determine energy policies; in the medium and long run, the parameters for markets to interact are set by geopolitics. Yet it is too early to conclude that, since geopolitics have a more systemic level impact on energy policies, ultimately nation’s preferences and inclinations to maintain energy security are set by geopolitics rather than the market.

Future research can extend to the supplier countries such as Iran, Algeria, Saudi Arabia, Qatar, Norway, Russia, Libya, UAE, and Gulf Cooperation Council (GCC) countries; OR even to a larger number of countries including the USA, Russia, China, India, Brazil, or Venezuela. Such research would be valuable to see whether the same order of priorities in energy security policy inclinations apply the same as the countries in a limited geography, selected for this research.

Also, it would be very interesting to conduct a similar research to a larger sample of elites in more countries and in a time period after the Russia-Ukraine 2014 crisis over the Crimea. Very few, including the researcher himself would have foreseen such level of tensions escalating to a conflict resulting in territorial annexation.

6.2 Analysis of findings from the interviews, (what interviewees from different countries share in common)

There are interesting common responses (more in detail in Appendix 4) that the dissertation would like to discuss further. First was a general misperception about the energy prices by saying that “The Cheap Oil Era is over.” Seven of the 37 people with whom interviews were conducted have indeed made such a comment. Considering that oil is at present again at 2003 levels, they may have made erroneous predictions. Yet, they may be right if the current depreciation is a temporary one and a last one before the prices peak and stay high due to the projected peak-oil. But if the

assumption about the elites having misinterpreted the direction of the oil prices, or that they had different expectations than what has happened, then this is a non-negligible factor that one should take into account in the policy formulations. An important observation to bear in mind is that it is difficult to predict energy markets in spite of more growing knowledge (Baumeister & Kilian, 2016). As such, it may be of greater importance to manage extreme fluctuations and ensure transparency, rather than setting a floor and/or ceiling margins on prices.

Second is the importance of Regulation (other than state intervention in prices) is rather in the form of Independent Regulatory Bodies. Nearly a third of all interviewees mentioned the importance of this issue, even though it was not one of the options presented. The research did not expect such a high response on this issue, and therefore in a “per experience” or “Delphic” manner the role for institutions such as independent regulators was a common response. This is an issue that requires to be further investigated, but is not possible to dedicate enough detail in this dissertation. This has been one important contribution of the interviews.

Third, is the finding whereby the elites having less opposition to nuclear energy than the general public. This does not mean that it is mostly supported, but the level of opposition was significantly less than the expectation at the onset of the research.

6.2.1 Which theoretical approach predominant

Neoclassical realism indeed is a useful theoretical approach to understand the elite interviews in this research. It's particularly useful when assessing how there were inclinations favoring state involvement. In all three countries, the respondents generally support market economy and the rules of supply and demand, but in France there was a stronger inclination favoring state involvement than the others. They also, in different degrees, and according to the specific issue, admit the influence of other factors. But this generally liberal and market-based approach to various issues in all three countries is not surprising, given their being free market countries, all belonging to NATO, i.e. the Western group of countries, two being EU members and one being an Accession Country to EU. But of course, their needs for energy and their solutions for it vary in

different degrees. Therefore, the details of the responses do indeed demonstrate differences between them. But their basic thrust is liberal market economy oriented.

For example, there are more supporters of “state intervention” in France than the other two. But the initial expectation was that it would also be relatively high in Turkey. At the other end of the scale, in Netherlands there are more opposes to “state intervention” than the other two. The Dutch attitude of being in favor of free market, is therefore foreseeing a minimal role for state intervention.

On the question of “natural resources being national resources or market commodities”, more French respondents agree they are national resources, whereas more Turkish respondents agree that they are either market commodities or both. Dutch are in between. This may reflect French attitude for independence including resource independence (which also explains their preference of independent nuclear energy, let alone their independent nuclear forces). Indeed, even though the French are the champions of EU and European integration in many areas, they are somehow more hesitant to follow the EU line in energy matters. The Turkish respondents, however, mostly represent business or academic elites. And this group is more prone to maintain Turkey’s links with the Western world (read this as liberal market economies), and therefore their tendency to agree that natural resources are market commodities is understandable. Perhaps, this also explains Turkish respondents’ putting less stress on geopolitics even though Turkey’s geopolitical location is more relevant for global energy flows, access to energy and therefore to energy security.

6.2.2 Markets or geopolitics

The results also indicate that French interviewees are believers of supremacy of markets over geopolitics. The French governments, given the French elites’ comments on relatively robust force projection capabilities, are also part of the governments who in the long term have a primacy geopolitics in their equation, as it would be understood from a Neoclassical Realist approach. Dutch interviews indicate preferences that are traditionally believers in free markets and market forces. Turkish governments are relatively newcomers to free markets but the results indicate their

belief in market forces. But their geostrategic location also makes Turkey aware of geopolitics, and hence it could be understood how Turkish government's ambition or aspiration to become an energy hub and energy trade center between the biggest producers (MENA) and consumers (Europe) of energy.

An important contributor to the Markets or Geopolitics debate has been Escribano Francés (2011: 41), who makes a very comprehensive analysis between markets and geopolitics vis-à-vis the Europeanization of energy security, and provides a political economic perspective where he introduces "governments' preferences in the process of hedging across neo-liberal or neo-realist scenarios" (Escribano Francés, 2011: 46-47). Escribano Francés is arguing that the EU has 'normative' power and therefore is more likely to prefer the institutionalization and mechanisms of markets under EU norms. This was indeed observable with many interviews conducted for this dissertation in France and Netherlands as well as the research in general. The "Europeanization of energy security" has thus been identified as a major EGA for both France and Netherlands, with the concession that future research may possibly need to fine-tune their categorization as 'external' if the EU integration becomes deeper in future years.

6.2.3 Which renewables

There were some differences in the different countries' interviews depending on their geographical settings, however as solar energy indicates that it's not always the places with optimal solar radiation which are the places where investments are realized. For instance, in France, the most support was for solar energy. Even though it is also admitted that the choice of renewables would depend also on geographic location and circumstances. In the Netherlands, many interviewees said that it depends on location and name solar energy first, among the renewables. And in Turkey some respondents say it depends on location, they cite many renewables, but majority says that renewables would not be sufficient for Turkey's energy needs. This may reflect the fact that Turkey is a leading country among those with fastest energy demand growth. It may also reflect the relative underdeveloped renewable technologies in Turkey.

6.2.4 Other findings (from data research)

On whether energy security is supply security or infrastructure security, the French are noticeable in their strong support for supply security, which explains their efforts for energy independence through nuclear energy. There is a noticeable minority among Turkish respondents that highlight the infrastructure security, which is also understandable given Turkey's ambition to become an energy hub with multiple international pipelines. Many respondents from all three countries say that energy security involves both supply and infrastructure security.

On the question of whether the energy security best ensured through privatization or state intervention, most respondents from all three countries state that either through privatization or through both. The French support for "both" answers however, is less strong than the respondents of the other two countries.

As in the chart below, one can see that the countries had various degree of 'policy' and 'political' inclinations to try to balance to maintain energy security and to adapt and modify their structures to critical events in the international system. Structural modification, mostly political, indeed set the parameters and frameworks in which markets operated. The measures for structural modification, had components of both internal and external balancing. There were similarities in the cases observations and interviews.

There were two areas of significant divergence, between the main case Turkey, and the other two case countries, France and Netherlands. The first is the development of nuclear energy, where Turkey is more of an outlier (although France is still proceeding with the Flamanville Project("Flamanville EPR vessel tests extended," n.d.). And the Second is the EGA policy of increasing 'Europeanization' of its energy policy.

Turkey's nuclear aspirations continued in spite of Fukushima and Flamanville. With the exception of the uncertainty of the project's future during the 9 months of tensions between Turkey and Russia due to the downing of a Russian SU type fighter jet, Turkey's first nuclear project of Akkuyu is considered as a 'strategic investment.' Regarding Turkey's lesser enthusiasm on the

‘Europeanization’ of its energy security, the conditional variable of being a member of the EU plays a significant role. Over the last decade, there has been great uncertainty between Turkey’s status as a candidate-state, and currently membership seems a distant prospect. This in and of itself is a political issue, and therefore, is another prime example about how politics set the framework. Although Turkey joins and takes as a reference many of the standards of the *acquis communautaire*, the uncertainty of EU membership was further accompanied with the ‘still-born’ NABUCO project. There are serious doubts about the solidarity of the “Energy Union” as many countries seem to prefer bilateral deals with Russia. Turkey was no exception in conducting its own bilateral agreements with Russia, and most notably on nuclear energy.

Turkey, over the last decade since BTC became operational, has had the motive to assure its own energy security, and to become an energy hub. Simultaneous diversification of multi-dimensional, multilateral, as well as diversification of bilateral deals seems to be the motivations for Turkey. Essentially, Turkey is ‘balancing’ its energy security. The TANAP project (also probably will extend to TAP) is an example about how Turkey concluded bilateral deals with Azerbaijan. And its likely extension to TAP is about how Turkey could act like a hub to extend the gas to the European markets.

On the other hand, Turkey has further developed bilateral deals and relationships with Russia. The Akkuyu nuclear plant, the Blue Stream project, as well as the Southern gas route agreed with the Turkish Stream I project. The intergovernmental agreement (IGA) of Turkish Stream I was signed on October 10, 2016 in Istanbul (“Turkey, Russia strike strategic Turkish Stream gas pipeline deal - Hurriyet Daily News, ENERGY,” 2016) for the occasion of the World Energy Conference.⁶⁵ Turkish Stream and similar recent projects, are clear indications of Turkey’s will to also further develop relations with Russia while also promoting alternatives (Kardaş, 2011). It shouldn’t be simply interpreted as a reaction to the ‘Energy Union’ where Turkey is excluded, because Turkey affirms contributing to European Energy Security as a policy objective. Rather Turkey’s decision

⁶⁵ The researcher personally attended and witnessed the proceedings as well as the post-signatory speeches and ceremonies by the heads of states. It was observed that there were no considerable head of state or head of government level representation from the EU or the United States. The UN Secretary General Ban Ki Moon was present, and the EU Energy Union Vice-President / Commissioner Maroš Šefčovič were present during the event.

to further develop relations with Russia while also seeking diversification can be due to the ‘disunited’ situation within the EU. Turkey, by relying on bilateral deals with Azerbaijan and Russia, essentially pursues the strategy of acting as an Energy hub (Wigen, 2012) in a similar way to Germany or France, developing its own bilateral arrangements.

6.3 Anticipation on Politics and Economics (geopolitics vs. market) while waiting for an energy revolution, oil still matters

The role of oil being different from other natural resources is mentioned time and again by many leading IR scholars:

Mao Zedong once said that power comes out of the barrel of a gun, but many people today believe that power comes out of a barrel of oil. It turns out that oil is the exception, not the rule, in judgments about economic power derived from natural resources, and thus it is worth a more detailed analysis (Nye, 2011: 63-64).

Though there is quick development in renewable energy and especially in the rise of natural gas markets as being more separate and independent from crude oil prices, oil still matters as the dominant energy natural resource. Its “M” like rise and fall from 2003 until 2015 over the last 12 years is an interesting reflection of geopolitical and market dynamics. It is also interesting that economic crises cycles from 2009 onwards have been seen as the prime factor responsible for the rise and fall of prices. Also, once the prices of oil rise and fall because of market dynamics, arguably there’s little room for maneuver available to governments for taking significant action before difficulties arrive (Bentley & Bentley, 2015). Oil price fluctuations are still hard to predict, despite better understanding of oil markets (Baumeister & Kilian, 2016).

However the two low prices in 2009 and 2015 at below \$50 per barrel of crude oil (Brent) have usually been attributed to the lack of growth and thus lack of demand in the global economy. Thus, from an economic perspective there’s been weak demand under a continuously recessive global economy, which worsened when the seemingly booming BRICS and non-OECD demand also weakened by 2014, especially in China. There are interesting correlations of non-OECD

growth and oil prices, as displayed in the table below from the World Bank Group, Policy Research Notes; (John Baffes, M. Ayhan Kose, Fanziska Ohnsorge, Marc Stocker, & The World Bank Group, 2015).

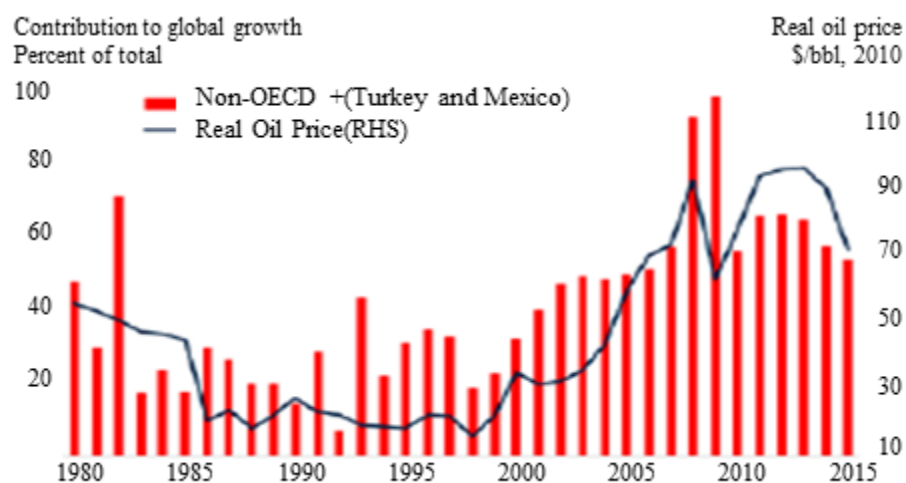


Figure 9. Contribution of non-OECD countries to global growth (World Bank, 2015)

On the other hand, the huge drop was perhaps caused more by the ‘demand’ side, as there were increased ‘supply’ of non-conventional oil and gas available through shale oil and gas and extracted by new techniques of hydraulic fracking (Baffes, et. al., 2015)(John Baffes et al., 2015). Facing such pressure, big oil producers such as Saudi Arabia continued to supply at lower prices instead of reducing supply.

One interesting coincidence, on the other hand, in the 2015 fall of prices was that it has occurred in the immediate aftermath of a period following the Russia-Ukraine crises and the height of the P5+1 Negotiations with Iran. Though the focus has been mostly on economic factors, the 2015 drop of prices has been a convenient coincidence with the “political” developments.

A similar “convenient” coincidence also occurred in the 1980’s. The price of oil and gas had also dropped by the mid 1980’s. It was an important economic reason that weakened the Soviet Union while the Soviet Union was engaged in a war of attrition in Afghanistan. And during both, Saudi Arabia continued to supply oil while prices were relatively low. The belief was that Saudi Arabia had a ‘target revenue’ and increased supply for that reason (Linderoth, 1992). From a scholarly

aspect, it is difficult to provide “empirical” evidence on the relationship that Saudi Arabia’s supply of crude oil (that had kept the prices low) has been part of a possible “political” deal with the United States. Thus one should be at the onset careful in suggesting any such implications. On the other hand the coincidence suggests that such a possibility in the 1980’s as in 2015 should not be discounted either. Especially considering that the effects of the past “story” of what low oil prices did to the Soviet and Russian economies have been observed both in the 1980’s and also late 1990’s. There are empirical evidences [in line with Granger Causality principles] suggesting that the decline in oil production did cause the fall in GDP of the Soviet Union and the former Soviet republics (Reynolds & Kolodziej, 2008).

Whether it was shaped by market forces and laws of economics, or carefully “designed” by policy makers, the causal chain reaction was that by the mid 1980’s the price of oil and gas had become low due to a glut of supply (Linderoth, 1992). This had immense implications for the decline of the revenues of the Soviet Economy. Similarly, the 1997 Asian Financial Crisis, had reduced the demand for oil due to economic deceleration, and dropped oil prices to the floor (Hammoudeh & Li, 2004). This, coupled with the devaluation of the Ruble, caused a financial crisis in Russia (Chiodo & Owyang, 2002). Still today, Russia is one of the most adversely affected countries due to oil and gas prices reaching their lowest levels since 2009. Russia’s oil revenues fall not only due to the lower prices of the crude oil, but also partly due to certain sanctions imposed in the aftermath of the 2014 Ukraine crisis. Russian economy has the structural problem of not being diversified sufficiently and therefore of over-reliance on hydrocarbon resources. Consequently, Russia’s interest rates remain high, and it is estimated that Russia loses about \$2bn in revenues for every dollar fall in the oil price (Bowler, 2015).

6.4 Some predictions for the future

6.4.1 The future of the Middle East and Caspian on the Energy equations

2011 “Arab Spring” uprisings in Tunisia, Egypt, Libya and in the rest of Middle East caused oil prices to peak at \$120 in February 2011, then slowly fall to \$110 levels through summer, back

again to \$124 in February 2012. By January 2016 they had reached below the \$30 a barrel threshold. This is an extremely volatile movement and it would be difficult to predict whether they would fall to \$20 or go up to over \$100.

The Ukraine-Russia crisis over the Crimea, which culminated in the annexation of Crimea to Russia suggest how energy related issues are potentially conflict-prone. This supports the view that although in the short and medium-run the market sets the price and drives many policies, the long term politics are set by the geopolitical framework.

The status of the Caspian Sea, is a prime example how, because of politics, the framework in which the markets can operate is limited (Bahgat, 2004, 2007). Political status of the Caspian Sea prevents gas from Turkmenistan to be brought to Turkey, in spite of both countries' and their private sector wants to realize such a supply route.

6.4.2 Prospect of the Shale Revolution and growth in LNG to commoditize natural gas and possibly change its market structure.

The Shale Revolution's effect can be felt in North America very visibly as the Henry Hub prices are at an all-time low. By contrast, it is interesting to note that in two out of the three case study countries, hydraulic fracturing has been banned due to environmental, seismic and ground water contamination concerns. While Turkey approves and provides licenses for such explorations, both France and the Netherlands have banned it. This is in spite of both countries having potentially rich shale reserves ("Conscious uncoupling" Economist, 2014) (as in the map below⁶⁶).

⁶⁶The Economist, 5 April 2014 <http://www.economist.com/news/briefing/21600111-reducing-europes-dependence-russian-gas-possible-but-it-will-take-time-money-and-sustained>

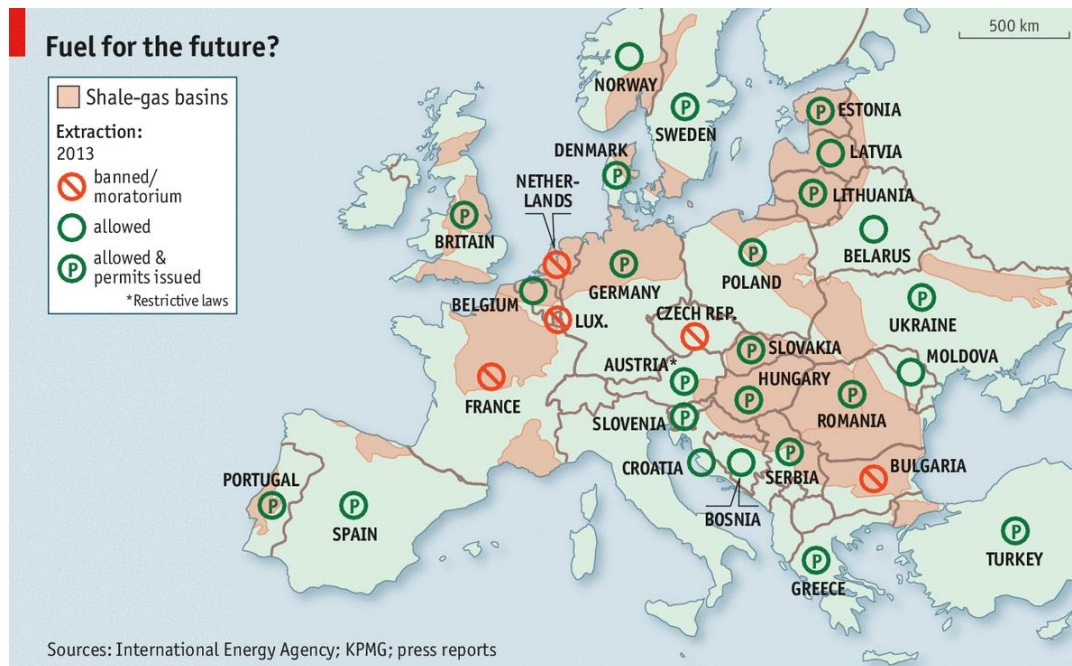


Figure 10. Map on status of Shale gas basins and the status of their permits of ban in Europe (“Conscious uncoupling” Economist, 2014)

6.4.3 The Eastern Mediterranean

The Eastern Mediterranean was also a source of potential tension between Turkey, Cyprus (Greek Cypriot Administration in the South) and Israel. A good account over the developments in eastern Mediterranean were provided by Ioannis Grigoriadis (Grigoriadis, 2014). Grigoriadis rightly mentions that there were conflict and tensions in the region before the discovery of natural gas, and that the discovery, if looked in the context of relative gains, would not likely promote cooperation. On the other hand, if absolute gains are emphasized through multilateral trust-building efforts by 3rd party actors (such as the EU) to even resolve difficult issues such as the Cyprus conflict, then the discovery of natural gas has the potential to become a source of peace and cooperation.

Considering the recent 9 month long tension between Turkey and Russia, the temporary progress that was seemingly achieved between the parties on the North and South of Cyprus (until it

deteriorated again), as well as the normalization process between Turkey and Israel⁶⁷, the Eastern Mediterranean gas may indeed present a potential for cooperation. As of April 2017, Turkey and Israel are in the 4th round of negotiations on the issue of exporting Israeli gas to Europe via Turkey, and an MoU may be announced within several months (NTV interview with Shaul Meridor from the Israeli Ministry of Energy, “Türkiye ile İsrail enerji anlaşması birkaç ay içinde imzalanabilir,” April 2017). This is not surprising because Turkey, even at the most escalated times over the East Mediterranean Gas fields, had never precluded the possibility that the gas from the Eastern Mediterranean wouldn’t be exported via Turkey. However, unless there’s a political solution in the island of Cyprus, it seems as if the political escalation on energy in the island would continue to rise (“A response from the Barbaros Hayreddin Pasha Ship to the Rum [Greek Cypriot] with the Mehter (Ottoman Military March) / Rumlara Barbaros Hayreddin Paşa Gemisi’nden ‘mehterli’ yanıt,” NTV, May 2017), and so will the economic competition to become an energy hub.

The Memorandum of Understanding (MoU) has been signed in April 2017 between Israel, Cyprus (Greek Cypriot Administration), Greece, and Italy on developing pipelines for transporting Israeli and Cypriot gas to Europe (TRT Haber, 2017). Such an MoU can potentially be considered as an alternative to the route via Turkey, even though Shaul Meridor in his interview claimed that this was not in spite of the deal with Turkey, and that they were exploring all feasible options (“The energy agreement between Turkey and Israel may be signed in a few months / Türkiye ile İsrail enerji anlaşması birkaç ay içinde imzalanabilir,” NTV, 2017).

6.5 Assessment and final words

6.5.1 Role of the ‘Term Structure Approach in Energy Security/Diplomacy’

The research proposes the “Term Structure Approach” to energy security as a conceptual tool for understanding how governments seek to maintain energy security, especially when facing

⁶⁷ Incidentally, Turkey simultaneously announced normalization with Russia and Israel in July 2015, and again reaffirmed in August 2016 (following the 15 July 2016 coup attempt).

exogenous shocks. At the onset, the research expected governments to balance needs about depending to a single country. However, the primary concern seems to be more about the access and diversifying available routes, rather than balancing against a particular government. The German government, for instance, seems not to be overly concerned for its dependence of a third of imported natural gas from Russia because they (the German government) regard the interdependence as symmetrical. The conclusion derived from this ‘confidence’ is that economic power is contingent on the market context (Nye, 2011 : 69-70).

This is where the research suggests the “Term Structure Approach” to energy security would offer a new tool for analytical understanding, rather than limiting the energy security as a form of economic power conditional to market conditions. Nye mentions projects to ship LNG from the USA to Europe and China’s efforts to construct Central Asian gas pipelines eastward as countering measures to Russian ‘market structuring’ and reduction of the power Russia could develop through ‘pipeline diplomacy’ (Nye, 2011 : 70). The role of oil and gas being forms of ‘economic power’ is as such described as context-dependent.

The Term Structure approach does, however see the ‘political’ nature of the decisions that have some important intervention or constraint to the Supply-Demand mechanisms. Economic measures in a neo-liberal economic world order imply less intervention from the government once the decision to privatize or unbundling was taken. They are in essence non-intervening to the supply and demand set by the global markets. Thus China’s effort to construct gas pipelines from Central Asia eastward is another ‘political’ (EGA or geopolitical) mechanism for allowing the ‘structure’ in which the Chinese or East Asian market could operate. Thus this effort is beyond the non-structural daily and yearly market price context.

From a conceptual aspect, to propose the basis for the “term structure approach to energy security” (and to energy diplomacy) the overall issue of energy security is assessed in the context of different theories of International Relations, not just from a Realist or Liberal paradigm. New pipelines fit within the “internal / external balancing” logic of Neo-Classical Realism’s concept of structural modifiers, which can modify the way states balance power at the systemic level or acts of “external balancing” through alliance formation (Taliaferro, 2001, 2006). Structural Modifiers alter

available supply and thus, in the long run, ‘structuring’ the frameworks within which markets would operate, and again in the long run they can have effects of ‘structural change’ in the countries they are developed (Piskulova, 2009). The Neo-Liberal notion of complex interdependency (Nye 2011 : 54-55) is crucial to understand energy security and supplier-producer relations. As such, in the daily, monthly, and annual settings the economic relations, sensitivities, effects of financial markets are not only observable but are of major importance. But ‘politics’ set these parameters for these market forces at a systemic level. The Term Structure Approach then separates the time factor and distinguishes how governments respond to exogenous shocks in order to maintain their energy security. Both the short-medium term role of economics and the mid-long term role of ‘politics’ for energy security issues (including actions that can be qualified as energy diplomacy) can be observed. Therefore, energy resources are not seen as merely economic power that is contextual to market prices, but as having a more economic character in certain times and more systemic political character in longer periods of time. This interplay becomes more evident and particularly of political and strategic significance when intergovernmental agreements are signed for nuclear power plants and pipelines.

In the long term, however, the ‘term structure approach’ explores the possibility of institutions (possibly an international regulation institution) as a possible way to increase energy security in the long run by setting an ‘institutional’ framework as EGA-type measures. Economic Interdependency, when symmetrical and balanced (when the vulnerabilities and overdependence are reduced and countries have a mutual dependence), tends to be achieved and delivering better results when the concerned countries in question have a more stable and balanced relationship. However, balance in economic interdependence may not be a guarantee of stability (Nye, 2011 : 57). There’s value and role attributed to setting institutional frameworks for enduring stability in the international system and bilateral economic relations.

By setting agendas and defining issue areas, international institutions often set the rules of the trade-offs in interdependent relationships. States try to use international institutions to set the rules that affect the transfer of chips among tables. Membership in the WTO, for example, restricts certain policy instruments that states might use and subjects others to a dispute resolution mechanism (Nye, 2011 : 61).

Thus, the research and the understanding through a “Term Structure Approach,” suggests that the role of a possible international regulatory institution needs to be further explored.

6.5.2 Role of decentralized energy grids

A ‘revolutionary’ game changer that would truly reduce the strategic importance of energy resources would be decentralized electricity generation from a wide variety of resources. At the onset of this research, renewables were not as accepted as they were today and most policy makers were highly skeptical on the concepts of decentralized energy grids, or “virtual power plants.” Few regarded them as a way to make energy more secure, by mitigating and distributing risk to small-scale production. Having base-load energy supply is still considered necessary.

There were a series of new events since the interviews. These were, the instability in the Ukraine and the subsequent annexation of Crimea by Russia, the Shale Revolution, new investments rapidly increasing towards renewables all around the world, big companies such as RWE in Germany announcing that they would adopt a greener and decentralized electricity generation model. Finally the ever increasing costs and delays in the project of the Flamanville nuclear power plant in France. The latter was an important factor since even in France, where nearly 80% of all electricity produced is nuclear, such nuclear investments were called into question. Because arguably, had a similar electricity generating capacity been invested on Renewables such as solar and wind, the constructions would have been completed relatively quickly with less delays in construction, and these facilities would have been operational in a relatively short amount of time. Whereas in Flamanville, even a country like France (very experienced in terms of nuclear facilities) the situation is one where the anticipated time of construction increased from 5 to 12 years and the costs doubled.

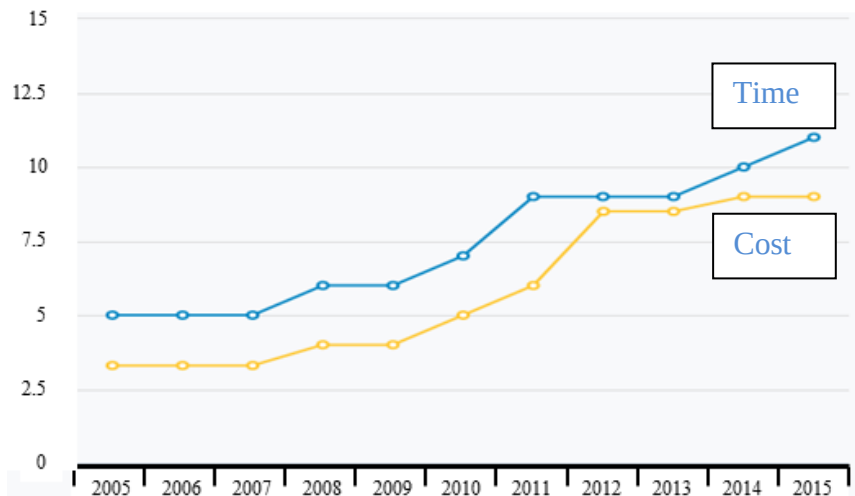


Figure 11. Evolution of cost and time * of Flamanville nuclear plant **Source:** (Soleymieux, 2015)

*Note: Cost in billion Euros, and time in number of years the project is estimated to last to completion

Therefore in the long term it is expected that there would be continued development and greater diversity of renewables in the energy generation portfolio. However these would require the ‘security’ of the smart-grids, which could be targets to cyber-security deficiencies and cyber-attacks to destabilize energy and economic assets of a country. This is an area of significant importance and future research.

6.5.3 Role of institutions

Through the research, the role of regulation has been mentioned as an important remedy against speculation. In practice, this is identified as a there is an institutional need to fill the void in international energy price regime (intuitively considered as a remedy to price extreme fluctuations, making medium term more predictable). However, complexities of the international system (as observed with the difficulties with the UN), are obstacles in the realization of such an institutional organizations. This is an important area identified for future research, as there’s a possibility for further research to explore to role of robust technical institutions, such as regulatory institutions, to become policy tools of EGA type adjustments. One of the important findings of this research is that there’s still much under-explored potential in the institutional and formal international

collaboration (including among energy regulators). In line with Keohane's Institutionalism, "...complex interdependence is now conceptualized in much more sophisticated ways in terms of networks. There is general acceptance that both differential state and non-state power, and multilateral institutions, are important factors affecting policy outcomes" (Keohane, 2009). Some scholars, such as Dani Rodrik, further suggest that the quality institutions trump other factors such as geography (geopolitics) and trade in determining income levels (Rodrik et al., 2004). This is suggesting institutions allow the strength for economic development.

The development of the institutional mechanisms as a result of multilateral diplomacy are in a way EGA type adjustments from different countries, which in turn could potentially provide another important dimension of economic collaboration and deepening of trade relations. International institutions, including an international energy regulator, are often the results of multilateral EGA-type policies, as they are external. The importance of regulation was indeed mentioned in several of the interviews as one of the important aspects in energy security (Appendix 4; 13 respondents). Further research is needed to analyze institutions as EGA type mechanisms and tools of multilateral diplomacy. Hence, future development of these international or regional regulatory platforms should not be surprising. Sarkozy and Brown (Brown & Sarkozy, 2009) and many interviewees in this research had expressed deep concern on extreme price volatility. Effective international institutional formal organization develop their own institutional dialogues, mechanisms and culture, the "market to geopolitics" challenges of energy security could be assessed in a holistic approach at a regional or international level.

Economic crisis since 2009 is considered as the prime factor responsible for the rise and fall of prices. Also, once the prices of oil rise and fall because of market dynamics, arguably there's little room for maneuver available to governments for taking significant action before difficulties arrive (Bentley & Bentley, 2015). By the same token, it is also arguable how much role OPEC still has as of 2016 to change the price of oil. It's observed that, in contrast to previous oil price surges, global demand and supply factors as well as broader geopolitical uncertainties have played a much greater role in recent years; resulting in a fading market power of OPEC, which is exasperated because of its failure to act homogeneously in recent years (Zietlow, 2015). And yet, the September 2016 meeting between Russian and Saudi Arabian governments, interpreted as an 'oil pact' on the

occasion of the G-20 meeting in China, has caused some change of expectations and further speculations about the supply and therefore price of oil for 2017 (“Saudi Arabia, Russia sign oil pact, may limit output in future | Reuters,” n.d.). The energy market is vital for the global economy as well as both the supplier and consumer states. There are existing EU institutions and many organizations such as the Energy Charter, or the World Energy Council that are also active in the field of energy security. However, it is important to keep in mind that such an institution should be platforms beyond the EU, and not all of the surrounding countries are members of the EU, and important countries such as the UK are leaving membership.

This is partially in line with not just the Neo-Classical Realist and Neo-Realist analogies to Microeconomics, and to the Liberal Institutional argument of strengthening International Institutions, but it also may be taken as future research topic by the Constructivist tradition. The “constructivist” notion of the “socialization of geography” is an understanding of the new geopolitics described by Houweling and Amineh (Houweling & Amineh, 2007). It implies a need to foster mechanisms of these institutions in line with liberal institutionalism. It also implies importance for the new IPE based more on changing global dynamics and enhanced role of technology such as the Internet and other information and communication technologies (ICTs) as described by Keohane (Keohane, 2009). The roles of ICTs is also important for Smart-Grid constitute some of the issues that would link energy security and cyber security.

Any Liberal rising institution or arrangement in changing global settings also requires a building or “construction” of these mechanisms and a socialization of the new meanings attached to geopolitics (Houweling & Amineh, 2007). Rising institutional mechanisms and their proponents should also bear in mind the time factors, and also how geopolitics and resource competitions affect energy security. Geopolitics and resource competition may have long term effect in setting framework. Economics operate within frameworks set by old and new geopolitics.

6.5.4 Paradigms for energy security

Overall, the paradigm that seems to be most dominant would be the pro-market Liberal tendency. But geopolitics are influenced fundamentally by systemic changes and policy makers struggle to adjust to such changes. It is an important understanding put forth in this research that as a matter of “time”, geopolitics have systemic level influences that set the entire framework. Making a change of framework within which markets operate the tectonic plate like frames are difficult to change. Like tectonic plates, observation is not apparent on the surface, and yet the shock waves from the shift are earth shattering. And such frameworks set geopolitical limitations to the global markets like geology shapes the valleys where rivers flow and agricultural activities happen. However, in the phase of market fluctuation and of geopolitical dynamics, international cooperation does not necessarily automatically follow. Ideally, there is a need to have institutional collaboration and cooperation to facilitate adaptation to the systemic changes in geopolitics as well as in times of excessive market fluctuations.

The domestic links and empirical comparisons of political institutions and vulnerability to financial crisis is as such a factor to bear in mind. There are some studies, such as the research by Jung-In Jo, claiming that the causes of financial crises cannot simply be attributed to market forces, instead resulting economic crises may be related to different political institutions. That democracy itself may be a stronger political institution that would lead to a possibly reduced impact of the financial crises (Jo, 2006). As such, there could potentially be a causal relationship linking level domestic political institutions (and the level of democracy) and financial crises; that low level of democracy makes those countries with weaker domestic democratic institutions more prone to economic crises, but on the other hand, high level of democracy facilitating economic stability. If strong [and democratic] institutions are related to the reduction of economic and financial crises, then an international regulatory institution, which hopefully could be transparent and democratic, may play a role in managing international energy commodities financial stability. There are important studies suggesting the link between transparency and attracting greater investments in the field of energy (Öge, 2016, 2017).

The currency union of the European Union is indeed set by technocrats and central banks, which are, to a great extent, autonomous from national governments. Even though the Eurozone is the only example of a widely successful currency union and had its political motivations, it is

nonetheless a similar situation in the sense that technocrats and experts collaborate with minimal political interventions from politicians. Since energy is more than a market commodity but also a strategic resource for any modern society, it is essential that those authorities with the mission to design markets should increase mechanisms for cooperation with one another.

Since then, there has passed a 2011 regulation for energy market integrity and transparency (REMIT) (Regulation (EU) No 1227/2011) and in December 2014 the EU Commission's implementing act was published in the Official Journal of the European Union. There's also an existing Association of European Energy Exchanges ("Europex," n.d.) which includes other neighboring energy exchanges such as EPIAS of Turkey. These European-wide developments suggest the need and potential development towards greater and international and EGA-type collaboration. Smart-Grids, according to certain views, could also be one of the apparatus that would make management and therefore regulation more feasible (Clastres, 2011). However, a politically empowered supranational (either regional or global organization) on energy regulation could have the means of making Short term and long term DMA and EGA adjustments similar to national governments, and therefore could be in a position to ensure greater confidence-building measures among its member states through dialogue.

CONCLUSION

This dissertation studied the impact of exogenous shocks on governments' responses to maintain energy security, given their sensitivities and vulnerabilities. In light of elite opinion and perceptions on energy security, the dissertation is providing a conceptual analysis for understanding whether governments respond to exogenous shocks by domestic (internal) market adjustments (DMA) and/or external geopolitical adjustments (EGA). This dissertation was based on the comparative case studies of the governments of Turkey, France, and Netherlands, which are OECD economies, as well as NATO members. However, these 3 countries had diverse settings and contexts, and have different energy mixes, geographies, demographics, economies and are at different stages of their nuclear industry. The 4 external shocks (historical events) analyzed were; a) The invasion of Iraq and the subsequent oil price hike; b) The Russia-Ukraine natural gas crisis of 2005/6; c) The world economic crisis since 2008 and the following extreme oil price fluctuation; and d) 2011 Fukushima nuclear meltdown in Japan.

I observed that governments developed two distinct decision timeframes/ time horizons in maintaining energy security. I used the concept of "Term Structure" when defining these time horizons. The term structure of was defined in terms of government's capacity to respond to exogenous shocks. Within a short term, I observed that governments cannot respond to vulnerabilities. Instead, short term measures have palliative solution in the market (stopgap/stop-go). For example, short term LNG import from countries like Algeria or Nigeria or spot markets are short term. In the long term, governments had the capacity (through DMA/EGA) to respond to vulnerabilities. These, were observable in the form of Intergovernmental Agreements on pipelines or nuclear power plants.

Governments used different strategies in different term structures in responding to exogenous shocks to their energy security. I argued that when governments are making short term decisions, their preferences and choices were structured by periods of conjuncture / cycles in market

conditions. In making medium to long term decisions, however, they were largely affected by more structural/systemic geopolitical factors. Geopolitics further requires a strategic context, which the market is unlikely to automatically deliver. TANAP (like its predecessor BTC) and Akkuyu nuclear plant were initiated with intergovernmental agreements. Intergovernmental agreements are significant for investments such as Oil & Gas pipelines and nuclear power plants, (ex: the recently ratified agreement on civilian nuclear cooperation between Turkey and China; signed in 2012 but ratified in September 2016).

Domestic/Internal Market Adjustments –DMA and External Geopolitical Adjustments –EGA (inspired from Internal Balancing –IB and External Balancing –EB) are instruments/long term strategies, to respond to exogenous shocks in the long term. In the long term, governments design their foreign policies through two sets modifying policies (DMA/EGA) to reduce vulnerabilities and enhancing/augmenting energy security. Though of similar importance, observations in this research suggest that there is a temporal difference. And because geopolitics and external adjustment observed tend to be of more long term nature, they (EGA-type policies) set the structure within which markets operate.

Therefore, in terms of theories, the Term Structure Approach in this research shares similarity to a Neoclassical Realist understanding, system level influences shapes the framework of policy. The “Term Structure Approach” to energy security in this dissertation, like Neoclassical Realism, accommodates political economy and elite perceptions. However, it also concludes for the case of this dissertation that geopolitics and are more observable in the case of maintaining energy security.

The findings in this research suggest that governments use both EGA and DMA in the long and short term. Overall, however, the findings indicate that countries’ energy security (political) concerns set the scene in which economics (markets) operate. In other words, countries’ foreign policy preferences are generally set by geopolitics rather than the market. Based on these findings, I am foreseeing a growing/continuing importance of geopolitics in the policy of governments in the area of energy security both in the medium and long-term.

Overall, the complexities of energy security make categorization difficult. This analysis has used the “Term Structure Approach” as a process to compare the EGA and DMA responses of governments in long term and short term in response to exogenous shocks, in order to maintain energy security. Therefore, the “Term Structure Approach” is a process intended as an analytical tool.

This research contributes to the literature in a number of ways. First, it is quite adaptable. The Term Structure Approach to energy security enables future researchers to adapt and customize their analytical tools to modify and improve their own analyses.

Specifically, as an original research, this dissertation contributes to the literature on energy security, markets and geopolitics as well as to the realisms vs liberalism debate in IR. For the latter, this research proposes an analysis that could be used by both schools of thought, similar to the way in which the Levels of Analysis approach is applied to various IR theories.

Another notable contribution of this research is that it provides a comparative analysis of three important countries that are members of both NATO and OECD. Turkey, France, and Netherlands are countries that matter due to their political and economic significance in regional and world politics; therefore, their comparison as least similar cases are significant contributions for future research.

The Term Structure Approach in energy security is a newly introduced approach and the conclusion in this dissertation that geopolitics set the structure within which markets operate, is suitable to Neoclassical Realist approaches to International Relations. This research has introduced the concept of Term Structure Approach to energy security. By this introduction, it was able to link IR Theory (Internal/External Balancing), an especially Neoclassical Realism, with energy security issues. Introduction of this approach was inspired from TOWS (Wehrich, 1982) in an effort to develop plans and strategies.

The approach used in this study provided an intertemporal / internal & external comparison for each case study countries. The study also provided SWOT analysis of energy security of case study

countries. This dissertation used original interviews, thereby providing primary data and insight for its findings and the broader academic literature. In addition to providing additional data, the analysis presented in this research fills certain gaps and makes contributions in the literature of Neoclassical Realism and energy security as well as the general gap between theory and policy.

By assessing how governments respond to exogenous shocks to maintain their energy security, it was possible through a Neoclassical theory to understand the extent geopolitics or markets (or economics) influence countries' policy responses in the area of energy security, when facing exogenous shocks. This has served an important purpose by shedding light to future exogenous shocks that challenge energy security.

REFERENCES

- ∴ Egegaz ∴. (n.d.). Retrieved June 10, 2017, from <http://www.egegaz.com.tr/tr/default.aspx#modal-text>
- 4-Week Avg U.S. Net Imports of Crude Oil and Petroleum Products (Thousand Barrels per Day). (n.d.). Retrieved March 12, 2017, from <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=p&s=wttntus2&f=4>
- 10 ans de chaud et froid entre Paris et Washington - L'Express. (n.d.). Retrieved August 18, 2016, from http://www.lexpress.fr/actualite/monde/amerique-nord/10-ans-de-chaud-et-froid-entre-paris-et-washington_858952.html
- A word to OPEC in Oran : Do no Harm. (n.d.). Retrieved January 25, 2016, from <http://www.ifri.org/en/publications/editoriaux/edito-energie/word-opec-oran-do-no-harm>
- AA. (n.d.). Türkiye ilk kez ABD'den doğalgaz aldı. Retrieved December 10, 2016, from <http://www.hurriyet.com.tr/turkiye-ilk-kez-abdden-dogalgaz-aldi-40074898>
- About GasTerra. (n.d.). Retrieved May 2, 2017, from <http://www.gasterra.nl/en/about-gasterra>
- About Gasunie » N.V. Nederlandse Gasunie. (n.d.). Retrieved May 2, 2017, from <https://www.gasunie.nl/en/about-gasunie>
- Akkuyu nuclear power plant turns into strategic investment. (n.d.). Retrieved August 11, 2016, from <http://www.dailysabah.com/energy/2016/08/11/akkuyu-nuclear-power-plant-turns-into-strategic-investment>
- Akkuyu'da ilk temel törenle atıldı AKKUYU NÜKLEER A.Ş. (n.d.). Retrieved December 12, 2016, from <http://www.akkunpp.com/akkuyuda-ilk-temel-torenle-atildi>
- Akkuyu'nun riskleri neler? | Gila Benmayor. (n.d.). Retrieved August 13, 2016, from http://sosyal.hurriyet.com.tr/Yazar/gila-benmayor_20/akkuyu39-nun-riskleri-neler_40190053
- Ally Versus Ally: America, Europe, and the Siberian Pipeline Crisis. (n.d.). Retrieved January 17, 2016, from <https://www.foreignaffairs.com/reviews/capsule-review/1987-12-01/ally-versus-ally-america-europe-and-siberian-pipeline-crisis>

- Amineh, M. P., & Houweling, H. (2005). *Central Eurasia in global politics: conflict, security, and development*. Leiden; Boston: Brill.
- Amineh, P. M. (2003). Globalisation, Geopolitics and Energy Security in Central Eurasia and the Caspian Region. Retrieved from http://inis.iaea.org/Search/search.aspx?orig_q=RN:34066234
- Analysis:French opinion shifts but a nuclear exit would be tough. (2011, June 30). *Reuters*. Retrieved from <http://www.reuters.com/article/us-france-nuclear-opinion-idUSTRE75T42H20110630>
- Andersen, J. J. (2013). The Dutch disease and intergenerational welfare. *Applied Economics*, 45(4), 465–476. doi:10.1080/00036846.2011.605762
- Apted, M. (1999). *The World Is Not Enough*. Retrieved from http://www.imdb.com/title/tt0143145/?ref_=nv_sr_1
- Arena, Z. G. / A. (n.d.). Barzani'ye “Türkiye seninle gurur duyuyor” sloganı. Retrieved December 9, 2016, from <http://www.hurriyet.com.tr/barzaniye-turkiye-seninle-gurur-duyuyor-slogani-21590650>
- AREVA. (2016, January 19). Press Release: United States: AREVA signed \$300 million in uranium enrichment contracts in 2015 - AREVA. Retrieved April 28, 2017, from <http://www.areva.com/EN/news-10703/united-states-areva-signed-300-million-in-uranium-enrichment-contracts-in-2015.html>
- Atas, R. S., Al Burai, A., & Mehmet, Y. (2017, April 15). Turkey's referendum: mainstreaming democracy or one-man rule? Retrieved April 27, 2017, from <http://www.trtworld.com/opinion/turkeys-referendum-mainstreaming-democracy-or-one-man-rule-336692>
- Atiyas, I., Cetin, T., & Gulen, G. (2012). *Reforming Turkish Energy Markets. [electronic resource] : Political Economy, Regulation and Competition in the Search for Energy Policy*. New York, NY : Springer New York : Imprint: Springer, 2012.
- Bahgat, G. (2004). Russia's oil potential: prospects and implications. *OPEC Review*, 28(2), 133–147.
- Bahgat, G. (2007). Prospects for energy cooperation in the Caspian Sea. *Communist and Post-Communist Studies*, 40(2), 157–168. doi:10.1016/j.postcomstud.2007.03.006

- Bakan Berat Albayrak Milli Enerji ve Maden Politikası'nı tanıttı | Enerji Haberleri. (2017, April 7). Retrieved April 13, 2017, from <http://www.haberturk.com/ekonomi/enerji/haber/1453335-bakan-albayrak-milli-enerji-ve-maden-politikasini-tanitti>
- Baku-Tbilisi-Ceyhan pipeline | Pipelines | Operations and projects | BP Caspian. (n.d.). Retrieved August 7, 2016, from http://www.bp.com/en_az/caspian/operationsprojects/pipelines/BTC.html
- Bakü-Tiflis-Ceyhan Boru Hattı Açıldı. (n.d.). Retrieved December 9, 2016, from <http://www.amerikaninsesi.com/a/a-17-2006-07-13-voa12-88020607/849318.html>
- Banking Regulation and Supervision Agency. (n.d.). Retrieved December 12, 2016, from <http://www.bddk.org.tr/WebSitesi/English.aspx>
- Bar'el, Z. (2017, June 18). As Qatar Crisis Rages, Egypt Gets Closer to Hamas. *Haaretz*. Retrieved from <http://www.haaretz.com/middle-east-news/egypt/1.796155>
- Barnett, A., & Bright, M. (2004, October 10). France's Saddam deals revealed. *The Guardian*. Retrieved from <http://www.theguardian.com/world/2004/oct/10/france.iraq>
- Basrah Gas Company. (n.d.). Retrieved May 1, 2017, from http://www.shell.iq/en_iq/about-us/projects-and-sites/basrahgascompany.html
- Bassin, M., & Aksenov, K. E. (2006). Mackinder and the Heartland Theory in Post-Soviet Geopolitical Discourse. *Geopolitics*, 11(1), 99–118. doi:10.1080/14650040500524129
- Baumeister, C., & Kilian, L. (2016). Forty Years of Oil Price Fluctuations: Why the Price of Oil May Still Surprise Us. *The Journal of Economic Perspectives*, 30(1), 139–160. doi:10.1257/jep.30.1.139
- Benmayor, G. (2012a, March 20). Nükleer pahalı ve tehlikeli. Retrieved from <http://www.hurriyet.com.tr/nukleer-pahali-ve-tehlikeli-20161722>
- Benmayor, G. (2012b, November 18). Katar: Kendi küçük, gücü büyük. Retrieved from <http://www.hurriyet.com.tr/katar-kendi-kucuk-gucu-buyuk-21954387>
- Bentley, R., & Bentley, Y. (2015). Explaining the price of oil 1971–2014 : The need to use reliable data on oil discovery and to account for “mid-point” peak. *Energy Policy*, 86, 880–890. doi:10.1016/j.enpol.2015.04.028
- Bezaf, J.-M. (2006, June 30). Un monde d'insécurité énergétique. *Le Monde.fr*. Retrieved from http://www.lemonde.fr/planete/article/2006/06/30/un-monde-d-insecurite-energetique_790450_3244.html

- Bilgin, M. (2015). Turkey's Energy Strategy: Synchronizing Geopolitics and Foreign Policy with Energy Security. *Insight Turkey*, 17(2), 67.
- Billon, P. L. (2004). The Geopolitical economy of "resource wars." *Geopolitics*, 9(1), 1–28.
doi:10.1080/14650040412331307812
- Blas, J. (2016, July 6). Iraq Inquiry Shows Oil Was a Consideration for U.K. Before War. *Bloomberg.com*. Retrieved from <https://www.bloomberg.com/news/articles/2016-07-06/iraq-inquiry-shows-oil-was-a-consideration-for-u-k-before-war>
- Body of Knowledge on Infrastructure Regulation. (n.d.). Market. Retrieved March 27, 2017, from <http://regulationbodyofknowledge.org/glossary/m/market/>
- Boersma, T. (2015, February 24). Shaken and dramatically stirred: How earthquakes affect Dutch politics and natural gas production and bring more Russian gas to Europe | Brookings Institution. Retrieved from <https://www.brookings.edu/blog/planetpolicy/2015/02/24/shaken-and-dramatically-stirred-how-earthquakes-affect-dutch-politics-and-natural-gas-production-and-bring-more-russian-gas-to-europe/>
- BOTAŞ - Boru Hatları İle Petrol Taşıma Anonim Şirketi. (n.d.). Retrieved March 11, 2017, from <http://www.botas.gov.tr/>
- Bowler, T. (2015). Falling oil prices: Who are the winners and losers. *BBC News*. Retrieved from http://mail.nlesd.ca/~barbara_billardm/WorldGeogFiles/Ch11%20oil/Falling%20oil%20prices%20BBC%20article%202015%20KEY.pdf
- Boxell, J. (2005, January 15). Shell and BP win contracts in Iraq. *Financial Times*. Retrieved from http://www.ft.com/cms/s/0/5f4f8c7a-669a-11d9-a832-00000e2511c8.html?ft_site=falcon&desktop=true#axzz4fqV4KPeB
- BP, E. (2016). *BP Statistical Reviews of World Energy*. Retrieved from <http://oilproduction.net/files/especial-BP/bp-statistical-review-of-world-energy-2016-full-report.pdf>
- BP is now a shareholder in TANAP | Features | News | BP Caspian. (n.d.). Retrieved April 27, 2017, from http://www.bp.com/en_az/caspian/press/features/BP-shareholder-of-TANAP.html
- Brown, G., & Sarkozy, N. (2009, July 8). Oil Prices Need Government Supervision. *Wall Street Journal*. Retrieved from <http://www.wsj.com/articles/SB124701217125708963>

- Buyuksahin, B., & Robe, M. A. (2011). *Does “Paper Oil” Matter? Energy Markets’ Financialization and Equity-Commodity Co-Movements* (SSRN Scholarly Paper No. ID 1855264). Rochester, NY: Social Science Research Network. Retrieved from <https://papers.ssrn.com/abstract=1855264>
- Buzan, B., & Hansen, L. (2009). *The evolution of international security studies*. Cambridge [U.K.]; New York, N.Y.: Cambridge University Press.
- CEP 2009: Nederland verkeert in diepe recessie | CPB.nl. (n.d.). Retrieved May 2, 2017, from <http://www.cpb.nl/en/pressrelease/329812/cpb-netherlands-deep-recession>
- Česnakas, G. (2010). Energy Resources in Foreign Policy: A Theoretical Approach. *Baltic Journal of Law & Politics*, 3(1). doi:10.2478/v10076-010-0003-y
- Checkel, J. T. (2006). Tracing Causal Mechanisms. *International Studies Review*, 8(2), 362–370. doi:10.1111/j.1468-2486.2006.00598_2.x
- Chester, L. (2010). Conceptualising energy security and making explicit its polysemic nature. *Energy Policy*, 38(2), 887–895. doi:10.1016/j.enpol.2009.10.039
- Chevalier, J.-M. (2010). Volatilité d prix du pétrole, régulation financière et politique énergétique. *Revue de l’Énergie*, (595), 153.
- Chiodo, A., & Owyang, M. T. (2002). A case study of a currency crisis: The Russian default of 1998. *Review*, 84. Retrieved from <https://research.stlouisfed.org/publications/review/02/11/ChiodoOwyang.pdf>
- Çin ile nükleer imza | Vahap Munyar. (n.d.). Retrieved September 4, 2016, from http://sosyal.hurriyet.com.tr/Yazar/vahap-munyar_44/makale/cin-ile-nukleer-imza_517368
- Çin ve Türkiye arasında nükleer anlaşma yürürlükte. (2016, September 3). Retrieved September 4, 2016, from <http://www.ntv.com.tr/ekonomi/cin-ve-turkiye-arasinda-nukleer-anlasma-yururlukte,F6hlvFHLF0qiOZHTiqzzUw>
- Ciuta, F. (2010). Conceptual Notes on Energy Security: Total or Banal Security? *Security Dialogue*, 41(2), 123–144. doi:10.1177/0967010610361596
- CKK, Akkuyu NGS’ye ortak olacak. (2017, June 19). Retrieved June 25, 2017, from <http://www.trthaber.com/haber/ekonomi/ckk-akkuyu-ngsye-ortak-olacak-320546.html>
- CL1 Commodity Quote - Generic 1st “CL” Future. (n.d.). Retrieved August 7, 2016, from <http://www.bloomberg.com/quote/CL1:COM>

- Claessens, S., & Kodres, L. E. (2014). *The regulatory responses to the global financial crisis: some uncomfortable questions* (IMF Working Paper No. WP/14/46). Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2423262
- Clastres, C. (2011). Smart grids: Another step towards competition, energy security and climate change objectives. *Energy Policy*, 39(9), 5399–5408.
- Clavel, G. (n.d.). Ten Years After Iraq, France Not Afraid Of War. Retrieved January 25, 2016, from http://www.huffingtonpost.com/2013/03/19/iraq-war-france_n_2901205.html
- CO1 Commodity Quote - Generic 1st “CO” Future. (n.d.). Retrieved August 7, 2016, from <http://www.bloomberg.com/quote/CO1:COM>
- Cochrane, P. (2016, February 18). Qatar hits the gas to ride out economic storm. Retrieved June 25, 2017, from <http://www.middleeasteye.net/news/qatars-gaseous-issues-2060064508>
- Cody, E. (2009, March 12). After 43 Years, France to Rejoin NATO as Full Member. *The Washington Post*. Retrieved from <http://www.washingtonpost.com/wp-dyn/content/article/2009/03/11/AR2009031100547.html>
- Collier, D. (2011). Understanding Process Tracing. *PS: Political Science & Politics*, 44(04), 823–830. doi:10.1017/S1049096511001429
- Columns. (n.d.). TAP’s shareholders. Retrieved April 27, 2017, from <https://www.tap-ag.com/about-us/our-shareholders>
- Competitive Markets. (n.d.). Retrieved March 15, 2017, from <http://regulationbodyofknowledge.org/glossary/c/competitive-markets/>
- Conscious uncoupling. (2014, April 5). *The Economist*. Retrieved from <http://www.economist.com/news/briefing/21600111-reducing-europes-dependence-russian-gas-possible-but-it-will-take-time-money-and-sustained>
- Consider Nuclear Energy on Par in Climate Change Mitigation: IAEA at COP21. (2015, December 10). [Text]. Retrieved April 19, 2017, from <https://www.iaea.org/newscenter/news/consider-nuclear-energy-on-par-in-climate-change-mitigation-iaea-at-cop21>
- Cushing, OK WTI Spot Price FOB (Dollars per Barrel). (n.d.). Retrieved August 8, 2016, from <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RWTC&f=D>
- Danchev, A., Danchev, P. of I. R. A., & MacMillan, J. (2004). *The Iraq War and Democratic Politics*. New York: Routledge.

- de Soysa, I. (2015). Oil and the “new wars”: another look at the resource curse using alternative data. *Development Studies Research*, 2(1), 64–76. doi:10.1080/21665095.2015.1082432
- Deudney, D., & Ikenberry, G. J. (2009). The Unravelling of the Cold War Settlement. *Survival*, 51(6), 39–62. doi:10.1080/00396330903461666
- Diriöz, A. O. (2012). Energy Security, Politics, Markets, Peace. *All Azimuth: A Journal of Foreign Policy and Peace*, 1(1). Retrieved from <http://dergipark.ulakbim.gov.tr/allazimuth/article/download/5000176461/5000158651>
- Dirioz, A. O., & Reimold, B. A. (2014). The Strategic Context of the UAE’s Nuclear Project: A Model for the Region? *Middle East Policy*, 21(3), 71–83.
- Djama, A. D. (2011). *The phenomenon of Piracy off the Coast of Somalia: Challenges and Solutions of the International Community*. Retrieved from http://www.un.org/depts/los/nippon/unnff_programme_home/fellows_pages/fellows_papers/djama_1112_djibouti.pdf
- Doğan, Y. (2004, June 16). Karar: Nükleer santral. Retrieved May 9, 2017, from <http://www.hurriyet.com.tr/karar-nukleer-santral-233914>
- Dombey, D. (2013, March 12). Turkey emerges as true Iraq war victor. *Financial Times*. Retrieved from <http://www.ft.com/cms/s/0/c038427a-8a40-11e2-bf79-00144feabdc0.html#axzz3jeBNxX6u>
- Dutch Disease Definition from Financial Times Lexicon. (n.d.). Retrieved May 1, 2017, from <http://lexicon.ft.com/Term?term=dutch-disease>
- Dutch pension fund sells stake in Fukushima operator over safety concerns. (2014, January 7). *Reuters*. Retrieved from <http://www.reuters.com/article/us-japan-nuclear-fund-idUSBREA0610E20140107>
- Duval C, Le Leuch H, Pertuzio A, & Weaver JL. (2009). INTERNATIONAL PETROLEUM AGREEMENTS-2 Embargo of ’73 launched era of mutual adjustment. *Oil & Gas Journal*, 107(34), 18–22.
- Ease of doing business index (1=most business-friendly regulations) | Data. (n.d.). Retrieved April 26, 2017, from <http://data.worldbank.org/indicator/IC.BUS.EASE.XQ?locations=SG>
- EDF at a glance. (n.d.). Retrieved April 28, 2017, from <https://www.edf.fr/en/the-edf-group/who-we-are/edf-at-a-glance>

EDF en bref. (n.d.). Retrieved January 25, 2016, from <https://www.edf.fr/groupe-edf/premier-electricien-mondial/edf-en-bref>

EDF in Russia and CIS. (2016, March 2). Retrieved April 17, 2017, from <https://russia.edf.com/en/homepage-edf-in-russia-en/edf-in-russia-and-cis>

EIA. (2016a). France - International - Analysis - U.S. Energy Information Administration (EIA). Retrieved May 20, 2017, from <https://www.eia.gov/beta/international/analysis.cfm?iso=FRA>

EIA. (2016b, August). France's Key Energy Statistics- International - U.S. Energy Information Administration (EIA). Retrieved April 28, 2017, from <https://www.eia.gov/beta/international/country.cfm?iso=FRA>

EIA. (n.d.). Netherlands - International - Analysis - U.S. Energy Information Administration (EIA). Retrieved May 1, 2017, from <https://www.eia.gov/beta/international/analysis.cfm?iso=NLD>

Ellyatt, H. (2016, August 16). These are the only sanctions that Russia cares about. Retrieved April 17, 2017, from <http://www.cnbc.com/2016/08/16/these-are-the-only-sanctions-that-russia-cares-about.html>

Energy Information Administration. (2017, June 25). International Energy Statistics. Retrieved June 25, 2017, from https://www.eia.gov/beta/international/rankings/#?product=53-1&cy=2016&tl_type=a

EPDK/EMRA. (2011). *2010 Yılı Doğalgaz Piyasası Sektör Raporu*. Ankara, Turkey. Retrieved from <http://www.epdk.org.tr/TR/Dokumanlar/Dogalgaz/YayinlarRaporlar/Yillik>

EPDK/EMRA. (2016). *2015 Yılı Doğalgaz Piyasası Sektör Raporu*. Retrieved from <http://www.epdk.org.tr/TR/Dokumanlar/Dogalgaz/YayinlarRaporlar/Yillik>

EPDK/EMRA. (2017). *2016 Yılı Doğalgaz Piyasası Sektör Raporu*. Ankara, Turkey. Retrieved from <http://www.epdk.org.tr/TR/Dokumanlar/Dogalgaz/YayinlarRaporlar/Yillik>

EPİAŞ | Enerji Piyasaları İşletme A.Ş. (n.d.). Retrieved August 13, 2016, from <https://www.epias.com/>

EPR de Flamanville, nouvelles anomalies repérées. (2015, June 9). *Le Monde.fr*. Retrieved from http://www.lemonde.fr/energies/article/2015/06/09/epr-de-flamanville-nouvelles-anomalies-reperees_4649978_1653054.html

- Erdil, M., & Karanfil, N. (2016, May 10). Mehmet Cengiz: “Nükleer santral işinin içindeyiz.” *Hürriyet*. Retrieved from <http://www.hurriyet.com.tr/mehmet-cengiz-nukleer-santral-isinin-icindegiz-40102087>
- Ertike, A. S., & Hacıoglu, U. (2011). The Important Issues Of Current Agenda: Energy Security And Climate Change. *International Journal of Business and Social Science*, 2(23). Retrieved from http://ijbssnet.com/journals/Vol_2_No_23_Special_Issue_December_2011/17.pdf
- Escribano Francés, G. (2011). Market or geopolitics? The Europeanization of EU’s energy corridors. *International Journal of Energy Sector Management*, 5(1), 39–59. doi:10.1108/17506221111120893
- ETKB 2015-2019 Stratejik Planı. (2014, December). Turkish Ministry of Energy and Natural Resources. Retrieved from <http://www.enerji.gov.tr/File/?path=ROOT%2f1%2fDocuments%2fStratejik+Plan%2fETKB+2015-2019+Stratejik+Plani.pdf&type=attachment>
- Europe Brent Spot Price FOB (Dollars per Barrel). (n.d.). Retrieved March 26, 2017, from <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RB RTE&f=D>
- Europex. (n.d.). Retrieved August 13, 2016, from <http://www.europex.org/>
- Evans, R. L. (2008). *Fueling our future : an introduction to sustainable energy*. Cambridge ; New York : Cambridge University Press, 2008.
- Everts, P. (2010). The Netherlands and the War on Iraq. Belgium-Dutch Political Science Conference. Retrieved from <https://soc.kuleuven.be/web/files/11/72/W16-112.pdf>
- Exclusive interview Maros Sefcovic VP Energy Union. (2016, October 7). Retrieved from <http://energypost.eu/interview-maros-sefcovic-eu-vp-energy-union-made-promise-2016-year-delivery-intend-keep/>
- Expanding the European Electricity Market. (n.d.). Retrieved August 23, 2016, from <https://www.entsoe.eu/news-events/announcements/announcements-archive/Pages/News/Expanding-the-European-Electricity-Market.aspx>
- Facts & figures about the port. (2015, June 12). Retrieved May 2, 2017, from <https://www.portofrotterdam.com/en/the-port/facts-figures-about-the-port>
- Factsheets - Humanitarian Aid and Civil Protection - European Commission. (n.d.). Retrieved December 5, 2016, from http://ec.europa.eu/echo/factsheets_en

- Fisher, M. (2017, June 13). How the Saudi-Qatar Rivalry, Now Combusting, Reshaped the Middle East. *The New York Times*. Retrieved from <https://www.nytimes.com/2017/06/13/world/middleeast/how-the-saudi-qatar-rivalry-now-combusting-reshaped-the-middle-east.html>
- Flamanville EPR vessel tests extended. (n.d.). Retrieved August 23, 2016, from <http://www.world-nuclear-news.org/RS-Flamanville-EPR-vessel-tests-extended-1404165.html>
- Foy, H., & Toplensky, R. (2017, April 24). Five European energy groups to invest in Gazprom's Nord Stream 2 pipeline. *Financial Times*. Retrieved from <https://www.ft.com/content/9c1959d2-5201-337d-9374-fd73cb4bc635>
- France: A Study of French Nuclear Policy After Fukushima. (n.d.). Retrieved January 25, 2016, from <http://k1project.org/explore-policy-france-after-fukushima/france-a-study-of-french-nuclear-policy-after-fukushima>
- France expands nuclear power plans despite Fukushima. (n.d.). Retrieved January 25, 2016, from <http://www.bbc.com/news/world-europe-13595455>
- France issues decree to close its oldest nuclear plant by April 2020 - ENERGY. (n.d.). Retrieved April 12, 2017, from <http://www.hurriyetdailynews.com/france-issues-decree-to-close-its-oldest-nuclear-plant-by-april-2020.aspx?pageID=238&nID=111801&NewsCatID=348>
- France, Ministry of foreign affairs. (n.d.). Making international regulations an asset for the French economy. Retrieved August 18, 2016, from <http://www.diplomatie.gouv.fr/en/french-foreign-policy/economic-diplomacy-foreign-trade/a-european-and-international/making-international-regulations/>
- Francés, G. E., & González, E. S. M. (2014). Managing energy interdependency in the Western Mediterranean. *Paix et Sécurité Internationales: Revue Maroco-Espagnole de Droit International et Relations Internationales*, (2), 81–102.
- France's Total fined €750,000 over Iraq "oil-for-food" scandal. (2016, February 26). Retrieved March 23, 2017, from <http://www.france24.com/en/20160226-france-oil-giant-total-fined-750000-iraq-oil-food-scandal-un>
- French gas giant GDF Suez changes name to Engie. (2015, April 24). *Reuters*. Retrieved from <http://www.reuters.com/article/gdfsuez-name-idUSL5N0XL1XS20150424>
- Friedman, T. L. (2008). *Hot, Flat, and Crowded: Why We Need a Green Revolution--and How It Can Renew America* (1 edition). New York: Farrar, Straus and Giroux.

- From Rep. of Turkey Ministry of Foreign Affairs, International Organisations. (n.d.). Retrieved April 24, 2017, from <http://www.mfa.gov.tr/sub.en.mfa?7cafe2ef-78bd-4d88-b326-3916451364f3>
- Fukushima | Nucleair Nederland. (n.d.). Retrieved May 2, 2017, from <http://nuclearnetherlands.com/historie/fukushima>
- Gartzke, E. (2007). The Capitalist Peace. *American Journal of Political Science*, 51(1), 166–191. doi:10.1111/j.1540-5907.2007.00244.x
- Gas-rich Netherlands little help to Europe if Russia cuts supplies. (2014, April 2). *Reuters*. Retrieved from <http://www.reuters.com/article/netherlands-gas-russia-idUSL5N0MU2TQ20140402>
- Gauthier-Villars, D. (2014, October 21). Christophe de Margerie, CEO of French Oil Giant Total, Dies in Plane Crash. *Wall Street Journal*. Retrieved from <http://www.wsj.com/articles/christophe-de-margerie-ceo-of-french-oil-giant-total-dies-in-plane-crash-1413848859>
- GDP growth (annual %) | Data. (n.d.). Retrieved March 11, 2017, from <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2009&start=2000>
- GeoPolitics in the High North. (n.d.-a). Retrieved April 30, 2017, from http://www.geopoliticsnorth.org/index.php?option=com_content&view=article&id=45%3Aarticle2&showall=1
- GeoPolitics in the High North. (n.d.-b). Retrieved December 12, 2016, from http://www.geopoliticsnorth.org/index.php?option=com_content&view=article&id=45%3Aarticle2&showall=1
- Gjelten, T. (2012). THE DASH FOR GAS: The Golden Age of an Energy Game-Changer. *World Affairs*, 174(5), 43–52.
- Goksel, T., & Ozturkler, H. (2012, June). The Comparison of the Recent Crises in Turkey in terms of Output Gap [MPRA Paper]. Retrieved December 9, 2016, from <https://mpra.ub.uni-muenchen.de/40806/>
- Göktepe, B. G., & Turkish Delegation UN Office Vienna. (2012). Fukushima sonrası dünya enerji politikaları ve nükleer güç. *Türkiye*, 12, 14–16.
- Goldthau, A., & Sovacool, B. K. (2012). The uniqueness of the energy security, justice, and governance problem. *Energy Policy*, 41, 232–240. doi:10.1016/j.enpol.2011.10.042

- Grigoriadis, I. N. (2014). Energy Discoveries in the Eastern Mediterranean: Conflict or Cooperation? *Middle East Policy*, 21(3), 124–133.
- Güney, A. (2005). An Anatomy of the Transformation of the US–Turkish Alliance: From “Cold War” to “War on Iraq.” *Turkish Studies*, 6(3), 341–359. doi:10.1080/14683840500235449
- Haghighi, S. S. (2007). *Energy security : the external legal relations of the European Union with major oil- and gas-supplying countries*. Oxford ; Portland, Or. : Hart, 2007.
- Hamdy, A. (2013). Water crisis and food security in the Arab world: The future challenges. *Global Water Partnership: Mediterranean*, [Http://Www. Gwpmed. Org/Files/IWRM-Libya/Atef%20Hamdy% 20AWC. Pdf](http://www.gwpmed.org/files/IWRM-Libya/Atef%20Hamdy%20AWC.Pdf). Retrieved from <https://gwpmed.org/files/IWRM-Libya/Atef%20Hamdy%20AWC.pdf>
- Hammoudeh, S., & Li, H. (2004). The impact of the Asian crisis on the behavior of US and international petroleum prices. *Energy Economics*, 26(1), 135–160. doi:10.1016/S0140-9883(03)00046-X
- Hetland, J., & Gochitashvili, T. (2006). *Security of Natural Gas Supply through Transit Countries*. Springer Science & Business Media.
- Hiltermann, J. (2017, June 18). Opinion | Qatar Punched Above Its Weight. Now It’s Paying the Price. *The New York Times*. Retrieved from <https://www.nytimes.com/2017/06/18/opinion/qatar-saudi-arabia-iran-muslim-brotherhood.html>
- Hopkirk, P. (1997). *Quest for Kim: In Search of Kipling’s Great Game*. University of Michigan Press.
- Houweling, H., & Amineh, M. P. (2007). Global Energy Security and Its Geopolitical Impediments—The Case of the Caspian Region. *Perspectives on Global Development and Technology*, 6(1), 365–388. doi:10.1163/156914907X207793
(<http://www.hydrant.co.uk>), S. designed and built by H. (2015, March 4). Bahrain attracting an increasing flow of FDI with investor-friendly policies. Retrieved April 26, 2017, from <https://www.oxfordbusinessgroup.com/analysis/bahrain-attracting-increasing-flow-fdi-investor-friendly-policies>
- Hürriyet Daily News. (2017, June 20). Russia's Rosatom sells 49 percent stake in Akkuyu nuclear project to Turkish companies - ENERGY. *Hürriyet Daily News | LEADING NEWS SOURCE FOR TURKEY AND THE REGION*. Retrieved from

- <http://www.hurriyetdailynews.com/russias-rosatom-sells-49-percent-stake-in-akkuyu-nuclear-project-to-turkish-companies.aspx?pageID=238&nid=114520&NewsCatID=348>
- ‘Ashrī, M., Zaytūn, B., & Şa‘b, N. (2010). *Arab environment, water, sustainable management of a scarce resource: 2010 report of the Arab Forum for Environment and Development (AFED)*. Beirut: Arab Forum for Environment and Development (AFED).
- IEA. (2009). *Energy Policies of IEA Countries - France 2009 Review*. Retrieved from <http://www.iea.org/publications/freepublications/publication/energy-policies-of-iea-countries---france-2009-review.html>
- IEA. (2012). WEO 2012 Golden Rules in a Golden Age of Gas. Retrieved August 6, 2016, from http://www.worldenergyoutlook.org/media/weowebiste/2012/goldenrules/weo2012_goldenrulesreport.pdf
- IEA. (2013, July 1). IEA - Netherlands SDE (stimulerend duurzame energie): Renewable energy and CHP production aid scheme. Retrieved May 1, 2017, from <https://www.iea.org/policiesandmeasures/pams/netherlands/name-24272-en.php>
- IEA. (2014). *The Netherlands 2014 Review*. OECD. Retrieved from <http://www.iea.org/publications/freepublications/publication/Netherlands2014.pdf>
- IEA. (2015). Netherlands-Energy System Overview; key data for 2014. Retrieved from <http://www.iea.org/media/countries/Netherlands.pdf>
- IEA. (2016a). *Global Gas Security Review 2016*. OECD/IEA. Retrieved from <https://www.iea.org/publications/freepublications/publication/GlobalGasSecurityReview2016.pdf>
- IEA. (2016b, September 27). IEA - Netherlands Feed-in Premium Programme SDE + (Stimulerend Duurzame Energie +). Retrieved May 1, 2017, from <https://www.iea.org/policiesandmeasures/pams/netherlands/name-24872-en.php>
- IEA. (2017). *Energy Policies of IEA Countries - France 2016 Review*. Retrieved from <http://www.iea.org/publications/freepublications/publication/energy-policies-of-iea-countries---france-2016-review.html>
- IEA. (n.d.). What is energy security? Retrieved June 3, 2017, from <https://www.iea.org/topics/energysecurity/subtopics/whatisenergysecurity/>
- IEA - Turkey. (n.d.). Retrieved August 24, 2016, from <http://www.iea.org/policiesandmeasures/pams/turkey/name-24961-en.php>

"İnşallah kriz bizi teğet geçecek." (n.d.). Retrieved December 12, 2016, from http://www.cumhuriyet.com.tr/haber/diger/16758/_insallah_kriz_bizi_teget_gececek_.html

International Decade for Action "Water for Life" 2005-2015. (n.d.). Retrieved March 27, 2016, from <http://www.un.org/waterforlifedecade/>

International Energy Statistics. (n.d.). Retrieved December 6, 2016, from <http://www.eia.gov/beta/international/data/browser/index.cfm#/?c=00000000000000000000000000000000g&ct=0&vs=INTL.44-1-TUR-QBTU.A&vo=0&v=H&start=1980&end=2014>

International Energy Statistics - EIA. (n.d.). Retrieved August 23, 2016, from <https://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=44&pid=44&aid=2>

International Gas Union - IGU. (2017). *IGU 2017 World LNG Report* (p. 100). Barcelona, Spain: International Gas Union - IGU. Retrieved from http://www.igu.org/sites/default/files/103419-World_IGU_Report_no%20crops.pdf

IOSCO. (2010, June). Objectives and Principles of Securities Regulation. Retrieved from <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD323.pdf>

Iran to pay \$1.9 billion to Turkey in gas dispute, reduce prices - ENERGY. (n.d.). Retrieved April 12, 2017, from <http://www.hurriyetsayisi.com/iran-to-pay-19-billion-to-turkey-in-gas-dispute-reduce-prices.aspx?pageID=238&nID=108930&NewsCatID=348>

İran yüzünden kışın doğalgaz sıkıntısı yaşayan Türkiye LNG alımını artırıyor - Ekonomi Haberleri - Radikal. (2009, August 17). Retrieved June 10, 2017, from <http://www.radikal.com.tr/ekonomi/iran-yuzunden-kisin-dogalgaz-sikintisi-yasayan-turkiye-lng-alimini-artiriyor-950050/>

Ivashina, V., & Scharfstein, D. (2010). Bank lending during the financial crisis of 2008. *Journal of Financial Economics*, 97(3), 319–338. doi:10.1016/j.jfineco.2009.12.001

Jacobs, D. (2016). *Renewable Energy Policy Convergence in the EU: The Evolution of Feed-in Tariffs in Germany, Spain and France*. Routledge.

Jo, J.-I. (2006). The Link between Domestic Political Institutions and Asian Financial Crises. *Asian Perspective*, 127–145.

John Baffes, M. Ayhan Kose, Fanziska Ohnsorge, Marc Stocker, & The World Bank Group. (2015, March). PRN01_Mar2015_Oil_Prices_The Great Plunge in Oil Prices: Causes, Consequences, and Policy Responses. Retrieved August 23, 2016, from

- http://www.worldbank.org/content/dam/Worldbank/Research/PRN01_Mar2015_Oil_Prices.pdf
- Kaplan, R. (2014). The Geopolitics of Energy. *Real Clear World*. Retrieved from <http://www.ctcittraining.org/topdocs/GeopoliticsEnergy.pdf>
- Kara, M. (2017, April 6). İşte Türkiye'nin yeni enerji stratejisi. Retrieved April 13, 2017, from <http://www.dunya.com/sektorler/enerji/iste-turkiyenin-yeni-enerji-stratejisi-haberi-357149>
- Karapınar YEKA'ya en düşük teklif Kalyon-Hanwha Grubu'ndan - Bloomberg HT. (2017, March 20). Retrieved March 21, 2017, from <http://www.bloomberght.com/haberler/haber/1995603-karapinar-yekaya-en-dusuk-teklif-kalyon-hanwha-grubundan>
- Kardaş, Ş. (2011). Turkey-Russia energy relations: The limits of forging cooperation through economic interdependence. *International Journal*, 67(1), 81–100.
- Kaufmann, R. K. (2011). The role of market fundamentals and speculation in recent price changes for crude oil. *Energy Policy*, 39(1), 105–115. doi:10.1016/j.enpol.2010.09.018
- Keohane, R. O. (2009). The old IPE and the new. *Review of International Political Economy*, 16(1), 34–46. doi:10.1080/09692290802524059
- Keohane, R. O., & Nye, J. S. (2001). *Power and interdependence*. London : Longman, c2001.
- Kerem Oge. (n.d.). Which transparency matters? Compliance with anti-c...: Full Text Finder Results. Retrieved from <http://resolver.ebscohost.com/openurl?sid=google&auinit=K&aulast=%c3%96ge&atitle=Which+transparency+matters%3f+Compliance+with+anti-corruption+efforts+in+extractive+industries&id=doi%3a10.1016%2fj.resourpol.2016.04.001&title=Resources+policy&volume=49&date=2016&spage=41&site=ftf-live>
- Kesicki, F. (2010). The third oil price surge – What's different this time? *Energy Policy*, 38(3), 1596–1606. doi:10.1016/j.enpol.2009.11.044
- Kirkuk storm not over. (2017, March 10). Retrieved March 11, 2017, from <http://www.upstreamonline.com/hardcopy/1223698/kirkuk-storm-not-over>
- Kısar, A. O. (2016, June). Türkiye'de Rüzgar Enerjisinin Gelişimi ve Geleceği. *EMO İZMİR ŞUBESİ HABER BÜLTENİ*, (313), 26–27.
- Klare, M. (2002). *Resource Wars: The New Landscape of Global Conflict*. Macmillan.

- Klare, M. (2008). *Rising Powers, Shrinking Planet: The New Geopolitics of Energy* (1 edition). New York: Metropolitan Books.
- Kleveman, L. (2004). *The New Great Game: Blood and Oil in Central Asia*. New York: Grove Press.
- Krauss, C., & Reed, S. (2015, September 28). Shell Exits Arctic as Slump in Oil Prices Forces Industry to Retrench. *The New York Times*. Retrieved from <http://www.nytimes.com/2015/09/29/business/international/royal-dutch-shell-alaska-oil-exploration-halt.html>
- Krugman, P. (2009). *The Return of Depression Economics and the Crisis of 2008* (Reprint edition). New York: W. W. Norton & Company.
- Kurucak, A., & Shcherbakova, A. (2016). Estimating the hedging value of an energy exchange in Turkey to a retail power consumer. *Energy*, 101, 16–26. doi:10.1016/j.energy.2016.02.005
- La Russie coupe le gaz à l'Ukraine. (2006, January 1). *Le Monde.fr*. Retrieved from http://www.lemonde.fr/europe/article/2006/01/01/la-russie-coupe-le-gaz-a-l-ukraine_726199_3214.html
- La vague de froid en Europe de l'Est a fait près de 80 morts ce week-end. (2006, January 23). *Le Monde.fr*. Retrieved from http://www.lemonde.fr/europe/article/2006/01/23/la-vague-de-froid-en-europe-de-l-est-a-fait-pres-de-80-morts-ce-week-end_733820_3214.html
- Lake Tuz Natural Gas Storage Facility opens. (n.d.). Retrieved March 15, 2017, from <http://www.dailysabah.com/energy/2017/02/11/lake-tuz-natural-gas-storage-facility-opens>
- Lebow, R. N. (1984). Thucydides and Aggression: A Reply to Professor Bluhm. *PS: Political Science & Politics*, 17(3), 591–594. doi:10.1017/S1049096500024616
- Linderoth, H. (1992). Target revenue theory and Saudi Arabian oil policy. *Energy Policy*, 20(11), 1078–1088.
- Lipsy, P. Y., Kushida, K. E., & Incerti, T. (2013). The Fukushima Disaster and Japan's Nuclear Plant Vulnerability in Comparative Perspective. *Environmental Science & Technology*, 130529150607006. doi:10.1021/es4004813
- Lobell, S. E., Ripsman, N. M., & Taliaferro, J. W. (Eds.). (2009). *Neoclassical Realism, the State, and Foreign Policy* (1 edition). Cambridge, UK ; New York: Cambridge University Press.

- Lochner, S., & Bothe, D. (2007). *From Russia with gas: an analysis of the Nord Stream pipeline's impact on the European Gas Transmission System with the TIGER-Model*. EWI Working Paper. Retrieved from <https://www.econstor.eu/handle/10419/26742>
- Lomagin, N. A. (2015). Foreign Policy Preferences of Russia's Energy Sector: A Shift to Asia? In *Russia, Eurasia and the New Geopolitics of Energy* (pp. 137–165). Springer. Retrieved from http://link.springer.com/chapter/10.1007/978-1-137-52373-0_7
- Ma, H., Oxley, L., & Gibson, J. (2009). China's energy situation in the new millennium. *Renewable and Sustainable Energy Reviews*, 13(8), 1781–1799. doi:10.1016/j.rser.2009.01.018
- Majnoon Oil Field. (n.d.). Retrieved May 1, 2017, from http://www.shell.iq/en_iq/about-us/projects-and-sites/majnoonoilfield.html
- Major shareholder in the project of the century | TANAP. (n.d.). Retrieved August 7, 2016, from <http://www.tanap.com/media/press-releases/major-shareholder-in-the-project-of-the-century/>
- Market-Based Price. (n.d.). Retrieved March 15, 2017, from <http://regulationbodyofknowledge.org/glossary/m/market-based-price/>
- Mastanduno, M., Lake, D. A., & Ikenberry, G. J. (1989). Toward a Realist Theory of State Action. *International Studies Quarterly*, 33(4), 457–474. doi:10.2307/2600522
- McGowan, F. (2008). Can the European Union's Market Liberalism Ensure Energy Security in a Time of "Economic Nationalism"? *Journal of Contemporary European Research*, 4(2), 90–106.
- Mehlum, H., Moene, K., & Torvik, R. (2006). Institutions and the Resource Curse. *The Economic Journal*, 116(508), 1–20.
- Mensonges d'Etat. (2003, July 1). Retrieved January 25, 2016, from <http://www.monde-diplomatique.fr/2003/07/RAMONET/10193>
- Meritet, S. (2007). French perspectives in the emerging European Union energy policy. *Energy Policy*, 35(10), 4767–4771. doi:10.1016/j.enpol.2007.04.010
- Milli Enerji ve Maden Politikası. (2017, Nisan). Retrieved April 13, 2017, from <https://www.setav.org/milli-enerji-ve-maden-politikasi/>
- Mills, R. M. (2013). Northern Iraq's Oil Chessboard: Energy, Politics and Power. *Insight Turkey*, 15(1), 51.

- Ministère des Affaires étrangères, et du D. international. (2009, September 14). Conseil affaires générales et Relations extérieures : conférence de presse de Pierre Lellouche (14 septembre 2009) [France Diplomatie]. Retrieved August 18, 2016, from <http://www.diplomatie.gouv.fr/fr/politique-etrangere-de-la-france/europe/evenements-et-actualites-lies-a-la-politique-europeenne-de-la-france/conseils-affaires-generales-et-affaires-etrangeres/precedents-cag-cae/article/conseil-affaires-generales-et-76416>
- Ministère des Affaires étrangères, et du D. international. (2012, November). La France et l'accès à l'énergie durable (Novembre 2012). Retrieved August 18, 2016, from <http://www.diplomatie.gouv.fr/fr/photos-videos-publications-infographies/publications/enjeux-planetaires-cooperation-internationale/fiches-reperes/article/la-france-et-l-acces-a-l-energie>
- Mission and Vision | EPIAŞ. (n.d.). Retrieved April 13, 2017, from <https://www.epias.com.tr/en/corporate/mission-and-vision>
- Misyon-Vizyon | EPIAŞ. (n.d.). Retrieved April 13, 2017, from <https://www.epias.com.tr/kurumsal/misyon-vizyon>
- Moravcsik, A. (2003). Striking a new transatlantic bargain. *Foreign Affairs*, 74–89.
- Morelli, M., & Pischedda, C. (2014). The Turkey-KRG Energy Partnership: Assessing Its Implications. *Middle East Policy*, 21(1), 107–121.
- NATO. (2015, September 1). NATO and the 2003 campaign against Iraq (Archived). Retrieved August 18, 2016, from http://www.nato.int/cps/en/natohq/topics_51977.htm
- Netherlands Enterprise Agency. (2017). Stimulation of Sustainable Energy Production (SDE+) | RVO.nl. Retrieved May 1, 2017, from <http://english.rvo.nl/subsidies-programmes/sde>
- Nijman, J. (2012). After “Iraq”: Back to the International Rule of Law? An Introduction to the NYIL 2011 Agora, Part 2 Chapter 3 in *Netherland Yearbook of International Law 2011. In Netherlands Yearbook of International Law 2011: Agora: The Case of Iraq: International Law and Politics* (pp. 71–94). Springer Science & Business Media.
- Nilsson, A. E., & Filimonova, N. (2013). Russian Interests in Oil and Gas Resources in the Barents Sea. Retrieved from <http://www.academia.edu/download/32409688/SEI-WorkingPaper-Nilsson-RussiaOilGasBarentsSea.pdf>

- Nougayrède, N. (2006, July 3). Vladimir Poutine, tsar du gaz. *Le Monde.fr*. Retrieved from http://www.lemonde.fr/a-la-une/article/2006/07/03/vladimir-poutine-tsar-du-gaz_791244_3208.html
- NTVMSNBC.COM. (2000, July 25). Akkuyu Santrali'ne iptal kararı. Retrieved May 12, 2017, from <http://arsiv.ntv.com.tr/news/19740.asp>
- Nuclear Power in Germany - World Nuclear Association. (n.d.). Retrieved December 12, 2016, from <http://www.world-nuclear.org/information-library/country-profiles/countries-g-n/germany.aspx>
- Nuclear Power in Turkey | Nuclear Energy In Turkey - World Nuclear Association. (2017, March). Retrieved May 12, 2017, from <http://www.world-nuclear.org/information-library/country-profiles/countries-t-z/turkey.aspx>
- Nye, J. S. (1987). Power and Interdependence Revisited. *International Organization*, 41(4), 725–753.
- Nye, J. S. (2008). *Understanding International Conflicts: An Introduction to Theory and History* (7 edition). New York: Longman.
- Nye, J. S., & Keohane, R. O. (2011). *Power & Interdependence* (4 edition). Pearson.
- Nye, J. S. N. J. (2004). The Power of Sticky Oil. *Foreign Policy*, (143), 14. doi:10.2307/4152900
- Nye Jr, J. S. (2011). *The Future of Power* (Reprint edition). New York: PublicAffairs.
- Nygaard, Jakob Riiskjaer, Jakob Riiskjær Nygård, & Rasmussen, Søren Møllerup. (2011). Europæisk afhængighed af russisk gas : har vi noget at frygte? - | bibliotek.dk. *Politik*, 14(3), 45–56.
- Öge, I. K. (2012). Transparency Promotion in Resource-Rich Countries: External Remedies to Reverse the Curse in the Caspian. Retrieved from <https://www.mysciencework.com/publication/show/585dfe97b8ebf15f3e66bafca7a466a>
- Öge, K. (2011). Domestic and External Remedies to the Resource Curse: Promotion of Transparency in the Caspian. Retrieved from <http://scholar.google.com/scholar?cluster=9352282967214941257&hl=en&oi=scholar>
- Öge, K. (2016). To disclose or not to disclose: How global competition for foreign direct investment influences transparency reforms in extractive industries. *Energy Policy*, 98, 133–141. doi:10.1016/j.enpol.2016.08.019

- Öge, K. (2017). Transparent autocracies: The extractive industries transparency initiative and civil society in authoritarian states. *The Extractive Industries and Society*. Retrieved from <http://www.sciencedirect.com/science/article/pii/S2214790X16301307>
- OICV-IOSCO - Iosco.org. (n.d.). Retrieved April 17, 2017, from https://www.iosco.org/about/?subsection=about_iosco
- Oil hits record above \$147. (2008, July 11). *Reuters*. Retrieved from <http://www.reuters.com/article/us-markets-oil-idUST14048520080711>
- Oil Seen Headed to \$60 as Saudis Signal Deeper Output Cuts. (n.d.). *Bloomberg.com*. Retrieved from <https://www.bloomberg.com/news/articles/2016-12-11/oil-seen-headed-to-60-after-saudis-signal-deeper-output-cuts>
- Oil, the Dutch Iraq inquiry on the Iraq war, and the missing letter - World Socialist Web Site. (n.d.). Retrieved August 23, 2015, from <https://www.wsws.org/en/articles/2010/01/dutc-j22.html>
- Öniş, Z., & Yılmaz, Ş. (2016). Turkey and Russia in a shifting global order: cooperation, conflict and asymmetric interdependence in a turbulent region. *Third World Quarterly*, 37(1), 71–95. doi:10.1080/01436597.2015.1086638
- OPEC keeps pumping oil at full bore, output up again - Aug. 10, 2016. (n.d.). Retrieved August 10, 2016, from <http://money.cnn.com/2016/08/10/news/opec-oil-output-up/index.html?iid=hp-toplead-intl>
- Orttung, R., Perovic, J., Pleines, H., & Schröder, H.-H. (Eds.). (2008). *Russia's energy sector between politics and business*. Bremen. Retrieved from <http://nbn-resolving.de/urn:nbn:de:0168-ssoar-436953>
- Østerud, Ø. (1988). Review Essay : The Uses and Abuses of Geopolitics. *Journal of Peace Research*, 25(2), 191–199. doi:10.1177/002234338802500209
- Ottaway, M., & Ottaway, D. (2014). How the Kurds Got Their Way: Economic Cooperation and the Middle East's New Borders Essay. *Foreign Affairs*, 93, 139–149.
- Our History - Financial Stability Board. (n.d.). Retrieved April 17, 2017, from <http://www.fsb.org/about/history/>
- Özatay, F. (2009). *Finansal Krizler ve Türkiye* (5th, March 2016 ed.). Istanbul Turkey: Dogan Kitap. Retrieved from <http://www.dr.com.tr/Kitap/Finansal-Krizler-ve-Turkiye/Fatih->

- Ozatay/Egitim-Basvuru/Is-Ekonomi-Hukuk/Ekonomi/urunno=0000000317700?gclid=CIfZ1_-O-tICFcwK0wodZn0K0w
- Özdemir, V., & Raszewski, S. (2016). State and Substate Oil Trade: The Turkey-KRG Deal. *Middle East Policy*, 23(1), 125–135.
- Pachta, L. (2003). France: driving force of the EU Common Foreign and Security Policy? *EUROPEUM (Institute for European Policy)*, Retrieved, 12(25), 2010.
- Paillard, C.-A. (2010). RUSSIA AND EUROPE’S MUTUAL ENERGY DEPENDENCE. *Journal of International Affairs*, 63(2), 65–84.
- Peker, E. (2017, April 24). Europe Energy Firms to Finance Up To 4.75 Billion Euros for Gazprom Nord Stream 2 Gas Pipeline [Text.Article]. Retrieved April 27, 2017, from <http://www.foxbusiness.com/features/2017/04/24/europe-energy-firms-to-finance-up-to-4-75-billion-for-gazprom-nord-stream-2-gas-pipeline.html>
- Peters, S. (2004). Coercive western energy security strategies: “resource wars” as a new threat to global security. *Geopolitics*, 9(1), 187–212. doi:10.1080/14650040412331307882
- Piccone, T. (2016a). Democracies’ Discontents: Where Do We Go From Here? *Rising Powers Quarterly*, 1(2), 151–165.
- Piccone, T. (2016b, December). Democracies’ discontents: Where do we go from here? | Brookings Institution. Retrieved from <https://www.brookings.edu/articles/democracies-discontents-where-do-we-go-from-here/>
- Pipelines Of Empire. (2013, November 13). Retrieved January 17, 2016, from <http://www.forbes.com/sites/stratfor/2013/11/13/pipelines-of-empire/>
- Piskulova, N. (2009). Environmental competitiveness during the economic crisis. *SEER: Journal for Labour and Social Affairs in Eastern Europe*, 12(2), 229–237.
- PJM - About PJM. (n.d.). Retrieved March 28, 2017, from <http://www.pjm.com/about-pjm.aspx>
- PM, G. B. O. 07/12/13 A. 10:05. (2013, July 12). World Water Wars: In The West Bank, Water Is Just Another Conflict Issue For Israelis And Palestinians. Retrieved February 26, 2016, from <http://www.ibtimes.com/world-water-wars-west-bank-water-just-another-conflict-issue-israelis-palestinians-1340783>
- Population, total | Data. (n.d.). Retrieved August 23, 2016, from <http://data.worldbank.org/indicator/SP.POP.TOTL?locations=NL-TR-FR>
- Port of Rotterdam Authority. (n.d.). Factsheet-Rotterdam-Energy-Port.

- Proedrou, F. (2007). The EU–Russia Energy Approach under the Prism of Interdependence. *European Security*, 16(3–4), 329–355. doi:10.1080/09662830701751190
- Programme by Topic | 23rd World Energy Congress Istanbul 2016. (n.d.). Retrieved April 19, 2017, from <http://www.wec2016istanbul.org.tr/congress/programme/programme-by-topic/>
- Publication: Energy Policies of IEA Countries - The Netherlands 2014 Review. (n.d.). Retrieved May 1, 2017, from <http://www.iea.org/publications/freepublications/publication/energy-policies-of-iea-countries---the-netherlands-2014-review.html>
- Puko, T., & Kantchev, G. (2016, January 15). Oil Prices Tumble Below \$30 a Barrel. *Wall Street Journal*. Retrieved from <http://www.wsj.com/articles/oil-prices-fall-below-30-a-barrel-1452853918>
- Rep. of Turkey, Ministry of Foreign Affairs. (2017, January 6). T.C. Dışişleri Bakanlığı'ndan 9. Buyukelciler Konferansi. Retrieved May 9, 2017, from http://www.mfa.gov.tr/no_-4_-6-ocak-2017_-9_-buyukelciler-konferansi-hk_.tr.mfa
- Reynolds, D. B., & Kolodziej, M. (2008). Former Soviet Union oil production and GDP decline: Granger causality and the multi-cycle Hubbert curve. *Energy Economics*, 30(2), 271–289. doi:10.1016/j.eneco.2006.05.021
- Rodrik, D., Subramanian, A., & Trebbi, F. (2004). Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development. *Journal of Economic Growth*, 9(2), 131–165. doi:10.1023/B:JOEG.0000031425.72248.85
- Romano, D. (2015). Iraqi Kurdistan and Turkey: Temporary Marriage? *Middle East Policy*, 22(1). Retrieved from <http://resolver.ebscohost.com/openurl?sid=google&auinit=D&aualast=Romano&atitle=Iraqi+Kurdistan+and+Turkey:+Temporary+Marriage%3F&id=doi:10.1111/mepo.12115&title=Middle+East+policy&volume=22&issue=1&date=2015&spage=89>
- Rose, G. (1998). Neoclassical realism and theories of foreign policy. *World Politics*, 51(01), 144–172.
- Royal Dutch Shell. (n.d.). Retrieved May 2, 2017, from <http://fortune.com/global500/royal-dutch-shell-5/>
- RSI June 2016 (Greece). (2016). *Investigación En Ciencia Regional*. Retrieved from <http://bibliotecadigital.ipb.pt/handle/10198/11735>

- Rubin, M. (n.d.). A comedy of errors: American-Turkish Diplomacy and the Iraq War. Retrieved August 23, 2015, from <http://www.meforum.org/701/a-comedy-of-errors-american-turkish-diplomacy>
- Rumlara Barbaros Hayreddin Paşa Gemisi'nden "mehterli" yanıt. (2017, May 5). Retrieved May 7, 2017, from <http://www.ntv.com.tr/video/turkiye/turkiye,3cvNcwXPC0OhTFITvt0KnA>
- Rzayeva, G. (2014). *Natural Gas in the Turkish Domestic Energy Market: Policies and Challenges* (OIES Paper No. NG-82). Retrieved from <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2014/02/NG-82.pdf>
- Sanction Russia? Reagan Tried It With No Luck. (2014, March 17). Retrieved January 17, 2016, from <http://www.bloombergvew.com/articles/2014-03-17/sanction-russia-we-ve-tried-this-before>
- Saudi Arabia, Russia sign oil pact, may limit output in future | Reuters. (n.d.). Retrieved September 7, 2016, from <http://www.reuters.com/article/us-g20-china-saudi-russia-oil-idUSKCN11B0UF>
- Schaub, G. (2005). Calculated Risks: Why Statesmen Let It Ride. *International Studies Review*, 7(1), 75–77.
- Schweller, R. L. (1996). Neorealism's status- quo bias: What security dilemma? *Security Studies*, 5(3), 90–121. doi:10.1080/09636419608429277
- Schweller, R. L. (2004). Unanswered Threats: A Neoclassical Realist Theory of Underbalancing. *International Security*, 29(2), 159–201.
- Schweller, R. L., & Priess, D. (1997). A Tale of Two Realisms: Expanding the Institutions Debate. *Mershon International Studies Review*, 41(1), 1–32. doi:10.2307/222801
- Sermaye Piyasası Kurulu. (n.d.). Retrieved December 12, 2016, from <http://www.spk.gov.tr/>
- Shapiro, J. S. (2014, March 5). Reagan administration warned Russian pipeline through Ukraine would weaken West. Retrieved March 22, 2017, from <http://www.washingtontimes.com/news/2014/mar/5/reagan-administration-warned-russian-pipeline-thro/>
- Shell hit by falls in oil price. (2009, January 29). *BBC*. Retrieved from <http://news.bbc.co.uk/2/hi/7857532.stm>
- Shtokmanovskoye field. (n.d.). Retrieved March 22, 2017, from <http://www.gazprom.com/about/production/projects/deposits/shp/>

- Singleton, R. A., & Straits, B. C. (2004). *Approaches to Social Research* (4 edition). New York: Oxford University Press.
- Snyder, G. H. (1996). Process variables in neorealist theory. *Security Studies*, 5(3), 167–192. doi:10.1080/09636419608429279
- Snyder, S. E. (2003). *Negotiating high stakes water conflicts: Lessons learned from experienced practitioners*. Natural Resources Law Center, University of Colorado School of Law. Retrieved from http://scholar.law.colorado.edu/cgi/viewcontent.cgi?article=1026&context=books_reports_studies
- Socialistische Partij, & Vliegenthart, A. (2010, January 14). Dutch prime minister finally admits to having broken international law in Iraq War. Retrieved May 1, 2017, from <https://international.sp.nl/news/2010/01/dutch-prime-minister-finally-admits-to-having-broken-international-law-in-iraq-war>
- Soleymieux, L. (2015, April 21). EPR de Flamanville : de plus en plus en retard, de plus en plus coûteux. *Le Monde.fr*. Retrieved from http://www.lemonde.fr/planete/article/2015/04/21/epr-de-flamanville-de-plus-en-plus-en-retard-de-plus-en-plus-couteux_4618984_3244.html
- Sørensen, C. T. N. (2013). Is China Becoming More Aggressive? A Neoclassical Realist Analysis. *Asian Perspective*, 37(3), 363–385. doi:10.5555/0258-9184-37.3.363
- Sovacool, B. K., Mukherjee, I., Drupady, I. M., & D’Agostino, A. L. (2011). Evaluating energy security performance from 1990 to 2010 for eighteen countries. *Energy*, 36(10), 5846–5853. doi:10.1016/j.energy.2011.08.040
- SPIEGEL ONLINE. (2011, February 17). “I Am Not Convinced”: Joschka Fischer on Germany’s “No” to the Iraq War - SPIEGEL ONLINE - International [memoirs]. Retrieved March 23, 2017, from <http://www.spiegel.de/international/germany/i-am-not-convinced-joschka-fischer-on-germany-s-no-to-the-iraq-war-a-745901.html>
- SPIEGEL ONLINE, Hamburg. (2011, November 8). Controversial Project Launched: Merkel and Medvedev Open Baltic Gas Pipeline - SPIEGEL ONLINE - International. Retrieved March 22, 2017, from <http://www.spiegel.de/international/europe/controversial-project-launched-merkel-and-medvedev-open-baltic-gas-pipeline-a-796611.html>

- Spiro, M. (1996). A House Divided: Tragedy and Evil in Realist Theory. In *Realism: Restatements and Renewal* (Routledge version 2013-04-03, pp. 385–424). Routledge.
- Sputnik. (n.d.-a). France, Russia Holding TAPI Gas Pipeline Talks - Pakistan's PM Sharif. Retrieved January 25, 2016, from <http://sputniknews.com/business/20150706/1024270204.html>
- Sputnik. (n.d.-b). Stock Markets Nervous as French Presidential Elections Point to Frexit Vote. Retrieved April 18, 2017, from <https://sputniknews.com/europe/201704131052603228-france-election-melenchon-frexit/>
- Stanislaw, J. A. (2008). Power play: Resource nationalism, the global scramble for energy, and the need for mutual interdependence. *Deloitte Touche*. Retrieved from http://expertosenred.olade.org/wp-content/uploads/sites/3/2014/07/IE005-us_er_PowerPlayResource-Nationalism_theGlobalScramble_forEnergyWEB_240209.pdf
- Stern, J. (2006). The Russian-Ukrainian gas crisis of January 2006. *Oxford Institute for Energy Studies*, 16, 5–12.
- Stevens, P. (2000). Pipelines or Pipe Dreams? Lessons from the History of Arab Transit Pipelines. *Middle East Journal*, 54(2), 224–241.
- Stulberg, A. (2007). *Well-Oiled Diplomacy*. SUNY Press.
- SunPower Press Release / Newsroom. (2013, May 22). [Press release]. Retrieved April 28, 2017, from <http://us.sunpower.com/company/newsroom/>
- Taliaferro, J. W. (2001). Security Seeking Under Anarchy: Defensive Realism Revisited. *ResearchGate*, 25(3), 128–161. doi:10.1162/016228800560543
- Taliaferro, J. W. (2006). State Building for Future Wars: Neoclassical Realism and the Resource-Extractive State. *Security Studies*, 15(3), 464–495. doi:10.1080/09636410601028370
- TANAP_Hukümetlerarası_Anlaşma.pdf. (n.d.). Retrieved from http://www.tanap.com/content/file/TANAP_Hukümetlerarası_Anlaşma.pdf
- TAP at a glance. (n.d.). Retrieved August 24, 2016, from <http://www.tap-ag.com/the-pipeline>
- Taq Taq. (2016). Retrieved April 26, 2017, from <http://www.genelenergy.com/operations/kri-oil-production/taq-taq/>
- TBMM. (2000, June 22). TBMM Kanun No. 4585 Kabul Tarihi : 22.6.2000. TBMM. Retrieved from <https://www.tbmm.gov.tr/kanunlar/k4585.html>

- T.C. Dışişleri Bakanlığı. (2017). Türkiye'nin enerji stratejisi. Retrieved April 13, 2017, from http://www.mfa.gov.tr/turkiye_nin-enerji-stratejisi.tr.mfa
- T.C. Dışişleri Bakanlığı'ndan. (n.d.). Retrieved August 23, 2016, from <http://www.mfa.gov.tr/sub.tr.mfa?23a3fc26-4f3b-47dd-943e-d8934cdad97e>
- T.C. Enerji ve Tabii Kaynaklar Bakanlığı. (2014). *ETKB2015-2019 Stratejik Planı*. Retrieved from http://sp.enerji.gov.tr/ETKB_2015_2019_Stratejik_Planı.pdf
- T.C. Enerji ve Tabii Kaynaklar Bakanlığı -. (2017, April 6). Milli Enerji ve Maden Politikası Tanıtım Programı. Retrieved April 13, 2017, from <http://www.enerji.gov.tr/tr-TR/Bakanlik-Haberleri/Milli-Enerji-Ve-Maden-Politikasi-Tanitim-Programi>
- Tekin, A., & Williams, P. A. (2009). Europe's External Energy Policy and Turkey's Accession Process. CES Working Papers Series 170, 2009. Retrieved from <http://aei.pitt.edu/11786/>
- Tekin, A., & Williams, P. A. (2011). *Geo-politics of the Euro-Asia energy nexus : the European Union, Russia and Turkey*. Basingstoke : Palgrave Macmillan, 2011.
- The Economic Times, <http://economictimes.indiatimes.co>. (2015, June 24). Total pulls out of Russia's Shtokman natural gas project. Retrieved March 22, 2017, from <http://economictimes.indiatimes.com/news/international/business/total-pulls-out-of-russias-shtokman-natural-gas-project/articleshow/47801641.cms>
- The Effects of the Iraq War on the U.S. – Turkish Relationship. (2003, May 6). Retrieved August 23, 2015, from <http://www.cfr.org/turkey/effects-iraq-war-us-turkish-relationship/p6024>
- The Guardian, & Staff & agencies. (2003, January 22). France and Germany unite against Iraq war. *The Guardian*. Retrieved from <https://www.theguardian.com/world/2003/jan/22/germany.france>
- The World Factbook — Central Intelligence Agency. (n.d.). Retrieved August 22, 2016, from <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2246rank.html>
- The World Nuclear Industry Status Report 2012 - World Nuclear Industry Status Report. (n.d.). Retrieved August 18, 2016, from <http://www.worldnuclearreport.org/The-World-Nuclear-Industry-Status.html>
- Tolga Bolukbasi, H., & Ozcurumez, S. (2011). Of context, interaction and temporality: Historical institutionalism and Turkey's approach to the ENP and the UfM. *Comparative European Politics*, 9(4–5), 524–542. doi:10.1057/cep.2011.15

TOT Historical Prices | Total S.A. Stock - Yahoo Finance. (n.d.). Retrieved March 23, 2017, from <https://finance.yahoo.com/quote/TOT/history?period1=1009861200&period2=1490241600&interval=1mo&filter=history&frequency=1mo>

Total and CEO acquitted in Iraq oil-for-food scandal. (2013, July 8). *Reuters*. Retrieved from <http://www.reuters.com/article/us-france-total-idUSBRE9670QK20130708>

TotalFina-Elf merger completed, firm renamed. (n.d.). Retrieved March 23, 2017, from <http://www.ogj.com/articles/print/volume-98/issue-13/in-this-issue/general-interest/totalfina-elf-merger-completed-firm-renamed.html>

Trans Adriatic Pipeline. (n.d.). Retrieved August 24, 2016, from <http://www.tap-ag.com/>

TRT Haber. (2017, April 3). İsrail gazı için ön anlaşma imzalandı. Retrieved May 8, 2017, from <http://www.trthaber.com/haber/ekonomi/israil-gazi-icin-on-anlasma-imzalandi-307289.html>

Trump and Putin “will try to mend ties”, Kremlin says. (2016, November 14). *BBC News*. Retrieved from <http://www.bbc.com/news/world-us-canada-37981770>

Trump’s Energy Policy: America First, Climate Last? | Bruegel. (n.d.). Retrieved from <http://bruegel.org/2017/02/trumps-energy-policy-america-first-climate-last/>

TUREB/TWEA. (2017). *Türkiye Rüzgar Enerjisi İstatistik Raporu Ocak 2017*. Retrieved from http://www.tureb.com.tr/files/tureb_sayfa/duyurular/2017_duyurular/subat/turkiye_ruzgar_enerjisi_istatistik_raporu_ocak_2017.pdf

Turizm Tatil Seyahat, T. T. (n.d.). Doha ve Ankara Esenboğa seferleri başladı. Retrieved from <http://www.turizmtatilseyahat.com/doha-ankara-esenboga-seferleri.htm>

Türk askeri Katar’a ulaştı. (n.d.). Retrieved June 19, 2017, from <http://www.cnnturk.com/dunya/turk-askeri-katara-ulasti>

Turkey ends take-or-pay with Russia - ECONOMICS. (2013, January). Retrieved April 12, 2017, from <http://www.hurriyetdailynews.com/turkey-ends-take-or-pay-with-russia.aspx?pageID=238&nID=38826&NewsCatID=344>

Turkey, Russia strike strategic Turkish Stream gas pipeline deal - ENERGY. (2016, October 10). Retrieved October 12, 2016, from <http://www.hurriyetdailynews.com/Default.aspx?pageID=238&nID=104822&NewsCatID=348>

- Turkey transfers billions in major company stakes to sovereign wealth fund. (2017, February 6). *Reuters*. Retrieved from <http://www.reuters.com/article/us-turkey-economy-fund-idUSKBN15L1PG>
- Turkey's first FSRU opened, ready to boost energy supply security by 20M cbm daily. (n.d.). Retrieved March 15, 2017, from <https://www.dailysabah.com/energy/2016/12/24/turkeys-first-fsru-opened-ready-to-boost-energy-supply-security-by-20m-cbm-daily>
- Turkish parliament approves renewable energy law - Invest in Turkey. (n.d.). Retrieved August 24, 2016, from <http://www.invest.gov.tr/en-US/infocenter/news/Pages/301210-turkish-renewable-energy-law-approved.aspx>
- Türkiye, Akdeniz'de doğalgaz ticaret merkezi olma yolunda. (2016, December 27). Retrieved March 16, 2017, from <http://www.dunya.com/sektorler/enerji/turkiye-akdenizde-dogalgaz-ticaret-merkezi-olma-yolunda-haberi-343367>
- Türkiye ile İsrail enerji anlaşması birkaç ay içinde imzalanabilir. (n.d.). Retrieved April 27, 2017, from <http://www.ntv.com.tr/video/ekonomi/ekonomi,puCXNZpqJ0qNFheg1qoyNQ>
- Tuz Gölü'ndeki gaz depolama tesisi bugün açılıyor. (2017, February 10). Retrieved June 3, 2017, from <http://www.trthaber.com/haber/gundem/tuz-golundeki-gaz-depolama-tesisi-bugun-aciliyor-298250.html>
- Umbach, F. (2010). Global energy security and the implications for the EU. *Energy Policy*, 38(3), 1229–1240. doi:10.1016/j.enpol.2009.01.010
- UN Office of the Iraq Program - Oil for Food: About the Program. (n.d.). Retrieved March 28, 2017, from <http://www.un.org/Depts/oip/background/>
- US desperately needs a national energy policy. (n.d.). Retrieved from <http://www.energypost.eu/us-desperately-needs-national-energy-policy/>
- Van de Graaf, T., & Colgan, J. (2016). Global energy governance: a review and research agenda. *Palgrave Communications*, 2, 15047. doi:10.1057/palcomms.2015.47
- van Wijnbergen, S. (1984). The 'Dutch Disease': A Disease After All? *The Economic Journal*, 94(373), 41–55. doi:10.2307/2232214
- Victor, D. G., Jaffe, A. M., & Hayes, M. H. (2006). *Natural Gas and Geopolitics: From 1970 to 2040* (1 edition). Cambridge University Press.
- Waltz, K. N. (1993). The emerging structure of international politics. *International Security*, 18(2), 44–79.

- Waltz, K. N. (2000). Structural realism after the Cold War. *International Security*, 25(1), 5–41.
- Waltz, K. N. (2001). *Man, the State, and War: A Theoretical Analysis* (Revised edition). New York: Columbia University Press.
- War in Iraq begins - Mar 19, 2003. (n.d.). Retrieved March 26, 2017, from <http://www.history.com/this-day-in-history/war-in-iraq-begins>
- Weigert, H. W. (1942). *Generals and Geographers: The Twilight of Geopolitics*. Oxford University Press.
- Weihrich, H. (1982). The TOWS matrix—A tool for situational analysis. *Long Range Planning*, 15(2), 54–66. doi:10.1016/0024-6301(82)90120-0
- What Dutch disease is, and why it's bad. (2014, November 5). *The Economist*. Retrieved from <http://www.economist.com/blogs/economist-explains/2014/11/economist-explains-2>
- Who we are. (n.d.). Retrieved May 2, 2017, from <http://www.shell.com/about-us/who-we-are.html>
- Wigen, E. (2012). Pipe Dreams or Dream Pipe? Turkey's Hopes of Becoming an Energy Hub. *Middle East Journal*, 66(4), 598–612.
- Woodward, B. (2007, September 17). Greenspan: Ouster Of Hussein Crucial For Oil Security. *The Washington Post*. Retrieved from <http://www.washingtonpost.com/wp-dyn/content/article/2007/09/16/AR2007091601287.html>
- World Bank. (2006). *Turkey Energy Milestones 2015*. World Bank Publications. Retrieved from http://books.google.com/books?hl=en&lr=&id=UIMlRpNq9KsC&oi=fnd&pg=PR5&dq=%22H+Street%22+%22Bank+does+not+guarantee+the+accuracy+of+the+data+included+in+this+work.+The+boundaries,%22+%22the+views+of+the+Executive+Directors+of+The+World+Bank+or+the+governments+they+represent.%22+%22&ots=hFNCAJ5c03&sig=q-zx6d41sWcYNWe_WtNPEexhAkk
- World Development Indicators | The World Bank. (n.d.). Retrieved December 13, 2016, from <http://wdi.worldbank.org/table/4.2>
- World Energy Council, & Oliver Wyman. (2016). *World Energy Trilemma Index 2016 : Benchmarking the Sustainability of National Energy Systems*. Retrieved from https://www.worldenergy.org/wp-content/uploads/2016/10/Full-report_Energy-Trilemma-Index-2016.pdf

- Yeldan, E. (2006). Neoliberal Global Remedies: From Speculative-Led Growth to IMF-Led Crisis in Turkey. *Review of Radical Political Economics*, 38(2), 193–213.
doi:10.1177/0486613405285423
- Yergin, D. (2006). Ensuring Energy Security. *Foreign Affairs*, 85, 69.
- Zaken, M. van A. (2014, April 30). International Public Goods (IPG's) - Development cooperation - Government.nl [onderwerp]. Retrieved August 25, 2016, from <https://www.government.nl/topics/development-cooperation/contents/international-public-goods>
- Zaken, M. van B. (2007, April 17). Statement in the open debate of the UN Security Council on Energy, Security and Climate - Speech - Government.nl [toespraak]. Retrieved August 18, 2016, from <https://www.government.nl/documents/speeches/2007/04/17/statement-in-the-open-debate-of-the-un-security-council-on-energy-security-and-climate>
- Zaken, M. van E. (2015, May 20). Increased energy security worldwide with greater opportunities for businesses - News item - Government.nl [nieuwsbericht]. Retrieved August 25, 2016, from <https://www.government.nl/latest/news/2015/05/20/increased-energy-security-worldwide-with-greater-opportunities-for-businesses>
- Zaken, M. van E. (2017, April 18). Gaswinning Groningen verder omlaag - Nieuwsbericht - Rijksoverheid.nl [nieuwsbericht]. Retrieved April 19, 2017, from <https://www.rijksoverheid.nl/actueel/nieuws/2017/04/18/gaswinning-groningen-verder-omlaag>
- Zietlow, K. (2015). What is left today? Analyzing OPEC's influence on the crude oil price. *Journal of Self-Governance & Management Economics*, 3(4). Retrieved from http://www.academia.edu/download/41323826/2015_-_Zietlow_-_OPEC.pdf

APPENDIX A – SAMPLE QUESTIONNAIRE

1. Global energy price fluctuations, such as crude oil per barrel, have positive and negative effects on the market. Do they require state intervention?
2. Natural energy resources are national resources (and assets)? Or market commodities?
3. Is Energy Security about infrastructure security or supply security?
4. Energy Security can be best addressed by market liberalization, (such as commercialization or privatization) or by state intervention?
5. Nuclear Energy is? (Especially effects of Fukushima)
6. Of the Renewable Energies, which ones are the most promising ?
 - i. Solar
 - ii. Wind
 - iii. Hydroelectricity
 - iv. Bio-Fuels/Bio-Mass
 - v. Geothermal
7. To what extent was the 2003 US invasion of Iraq a guise to control the oils of Iraq?
8. Is Russia using natural gas as a trump card against the EU?
9. Did the Russia-Ukraine crisis cause a drastic shift in European policy?
10. What were the most important reasons that lead oil prices to reach historical highs at \$147 per barrel in 2008? What were this event's policy implications?

11. What were the most important reasons that lead oil prices to suddenly drop to \$50 per barrel in 2009? What were its policy implications?
12. What would be the political consequences of a rise in oil prices?
13. Why should policy makers care if prices are very low?
14. Do you foresee a drastic rise or fall of oil prices in the near future? If so, why, and what would be its policy implications? (Especially since the Arab Spring) (Was skipped/integrated to the previous questions, as the Arab Spring was abandoned as a case)

10 & 11 and 12 & 13 & 14 in most interviews, to save time, were asked as one question)

APPENDIX B – INTERVIEWS AND WITH SOME SUMMARIZED ANSWERS

Interview numbers and interviewee numbers are listed randomly so that they would not reflect a pattern on the date when interviews were conducted, thus ensure anonymity.

interview #	Country Interviewee #	Date and place of Interview	COUNTRY / Institution identifier
1	France, Int. 1	6.6.2012, Paris	FR - Research Center
2	Turkey, Int. 1 (same person as France Int.9)	6.6.2012, Paris	TR - Research Center (TARIF)
3	France, Int.2	6.6.2012, Paris	FR -Research Center
4	France, Int.3	6.6.2012, Paris	FR - Research Center
5	Turkey, Int.2	7.6.2012, Paris	TR-IO High Level
6	France, Int.4	7.6.2012, Paris	FR- Private Company High Level
7	Turkey, Int.5	21.7. 2012, Istanbul and Ankara	TR- University
8	Netherlands, Int.1	19 .10.2012, The Hague	NL - Government High Level
9	Netherlands, Int.2	19 .10.2012, The Hague	NL - Research Center
10	Turkey, Int.6	23.10.2012, Ankara	TR - Private Company & NGO High Level
11	Netherlands, Int.3	12 .11. 2012, The Hague	NL - Government High Level
12	Netherlands, Int.4	12 .11. 2012, The Hague	NL - Research Center
13	Turkey, Int.7	10.10. 2011, Ankara	TR- University

14	Turkey, Int.8	6.12. 2011, Ankara	TR - University & Pol.
15	Turkey, Int.9	17.5.2012, Ankara	TR - Retired- Government High Level
16	France, Int.5	23.5. 2012, Online, (VOIP)	FR – University
17	Netherlands, Int.5	12.7. 2012, Groningen	NL – University
18	Netherlands, Int.6	18.7. 2012, Groningen	NL – University
19	Netherlands, Int.7	19 .7.2012, Groningen	NL – University
20	Netherlands, Int.8	19.10. 2012, The Hague by Phone	NL – Journalist
21	Turkey, Int.10	22.10.2012, Ankara	TR - Government Company
22	Netherlands, Int.9	12.11. 2012, The Hague	NL – University
23	Netherlands, Int.10	16 July 2012, Groningen	NL – University
24	Netherlands, Int.11	12.11. 2012, The Hague	NL – University & Research Center
25	France, Int.6	13.11. 2012, Paris	FR – Government
26	France, Int.7	13.11. 2012, Paris	FR – Government
27	Netherlands, Int.12	13.11. 2012, The Hague	NL - Private Company
28	France, Int.8	1.5.2012, Online, VOIP	FR - Private Company
29	Italy, Int.# 1	5.6. 2012, Brussels	ITALY – IO
30	Turkey, Int.11	5.6. 2012, Brussels	TR – IO

31	France, Int.9 (Same Person as Turkey, Int.1)	6.6. 2012, Paris	FR - Research Center (FIRAT)
32	Turkey, Int.12	10.10. 2012, Ankara Online	TR - Government High Level
33	Turkey, Int.13	7.6. 2012, Paris	TR – IO
34	Turkey, Int.14	11.10 2011, Ankara Online	TR - Government High Level
35	Turkey, Int.15	25.10 2011, Ankara	TR - Private Company & NGO
36	Turkey, Int.16	24.10 2011, Ankara	TR - Government High Level
37	Russia, Int.1	8.6.2012, Brussels	Russia - Government High Level
38	Turkey, Int.17	8.5. 2012, Istanbul	TR – University (rdt- Government High Level)

Some background about the interviewees:

While some interviewees had allowed openly using their name and content of interview, others in the France, Netherlands and Turkey said their name could possibly be mentioned in list of interviewees without revealing content of the interview. Thus, all interviewees have been treated as anonymous, with an attributed interview number per case country. In addition to being attributed an interviewee number per country, when aggregating and comparing the interviews, identifying nicknames were attributed to the interviewees, but these are not used in the references in order to protect their identity.

Interviews in TURKEY:

- 1) Turkey Interviewee # 7: Academia, interview fully recorded.
- 2) Turkey Interviewee # 8: Academia and Politics, interview fully recorded
- 3) Turkey Interviewee # 5: Academia, interview fully recorded

- 4) Turkey Interviewee # 9: a recently retired Turkish diplomat with private sector experience, with experience in energy producer countries such as UAE, Azerbaijan, and Saudi Arabia.
- 5) Turkey Interviewee # 14: a current on duty very high level official from M. FA/Econ/Energy first met in September but concluded interview online in October. Written format re-emailed.
- 6) Turkey Interviewee # 12: a current on duty very high level official from M. FA/Econ/Energy, met with him yet no recording, completed interview online and written format re-emailed for confirmation.
- 7) Turkey Interviewee # 16: current on duty official from a Turkish government ministry/agency. Following the non-recorded interview, written format emailed for confirmation.
- 8) Turkey Interviewee # 15: current high level corporate executive). Anonymity was a serious issue with this interviewee as she/he did not want one of the jury members to know her/his identity. The interviewee insisted on anonymity because she/he did not want a person who was or still is in my Jury to know the content of her/his responses. An entire afternoon was spent for this interview.
- 9) Turkey Interviewee # 11: Official from TR Gov. & IO). No recording of interview
- 10) Turkey Interviewee # 1 (same person as France Interviewee # 9) (recorded)
- 11) Turkey Interviewee # 13 (official from TR Gov. & IO) No recording of interview
- 12) Turkey Interviewee # 2 (High Level Official from TR & in IO)
- 13) Turkey Interviewee # 6 (High Level Energy Executive in Private Sector)
- 14) Turkey Interviewee # 10 (Chief of Dept. in Company owned by Turkish State). No Recording of Interview. anonymity

Interviews in FRANCE:

Special thanks to Ambassador Ariner, to French Embassy in Ankara and the Economic Attaché Mr. Gaffar, to the Turkish Embassy in Paris, and Mrs. Beliz Celasin Rende.

- 1) France Interviewee # 5 (recorded- Online interview in London, UK)-Possibly reconfirmed for name being included in list of interviewees
- 2) France Interviewee # 1 (recorded) – Possibly reconfirmed for name being included

- 3) France Interviewee # 3 (recorded) – Possibly reconfirmed for name being included in list of interviewees
- 4) France Interviewee # 9 (recorded)
- 5) France Interviewee # 2 (recorded) – Possibly reconfirmation for name being included in list of interviewees
- 6) France Interviewee # 4 (fully recorded, over 1 hour in company HQ.)
- 7) France Interviewee # 6 – Gov. (recording of the beginning of conversation only okayed BUT out of battery)
- 8) France Interviewee # 7 - Gov. no recording
- 9) France Interviewee # 8 (Online interview partial and inconclusive- anonymity)

Interviews in NETHERLANDS:

Special Thanks to TUBITAK, the University of Groningen, to the Embassy of the Netherlands in Ankara, and 2nd Secretary Mr. Rogier van der Pluijm, to the Turkish Embassy in The Hague, and to Ambassador Ugur Dogan, Ambassador Sadik Aslan, and to Mr. Hakan Cengiz.

- 1) Netherlands Interviewee # 5 – Academia (recorded, re-confirm for allowing to be mentioned in list)
- 2) Netherlands Interviewee # 10 – Academia (recording allowed BUT not possible due to technical difficulties- Name in list of interviewees)
- 3) Netherlands Interviewee # 6 – Academia (recorded with my-garage-band- recording allowed. Name in list of interviewees)
- 4) Netherlands Interviewee # 7 – Academia. (Recorded, allowed to be mentioned in list)
- 5) Netherlands Interviewee # 1 – Gov. (recording allowed under condition of complete anonymity)
- 6) Netherlands Interviewee # 8 (Journalist in Amsterdam, conversation over the phone, no recording)
- 7) Netherlands Interviewee # 2 Academia/institute (recorded, allowed to be mentioned in list)
- 8) Netherlands Interviewee # 3 Gov. (recording allowed under condition of complete anonymity)
- 9) Netherlands Interviewee # 4 Institute (recording allowed under condition of anonymity)

- 10) Netherlands Interviewee #9. Gov. (nor recording due to too much background noise in luncheon environment)
- 11) Netherlands Interviewee # 11 (no recording- complete anonymity) Academia / Institute
- 12) Netherlands Interviewee # 12 (no Recording- anonymity) (partial-inconclusive interview but important comments about Dutch Gov. playing too European and too much emphasizing European solidarity; while big Europeans doing bilateral deals)...

Other interviews

Two additional interviews were conducted with non-case study country experts offering their perspectives to the same questions. The first one, Italian Interviewee, was with an Italian IO expert, and the second one, Russian Interviewee, was with a high level Russian diplomat. These interviews were conducted because there was the opportunity, and because it was important to see the reactions and responses from non-case country experts for comparison.

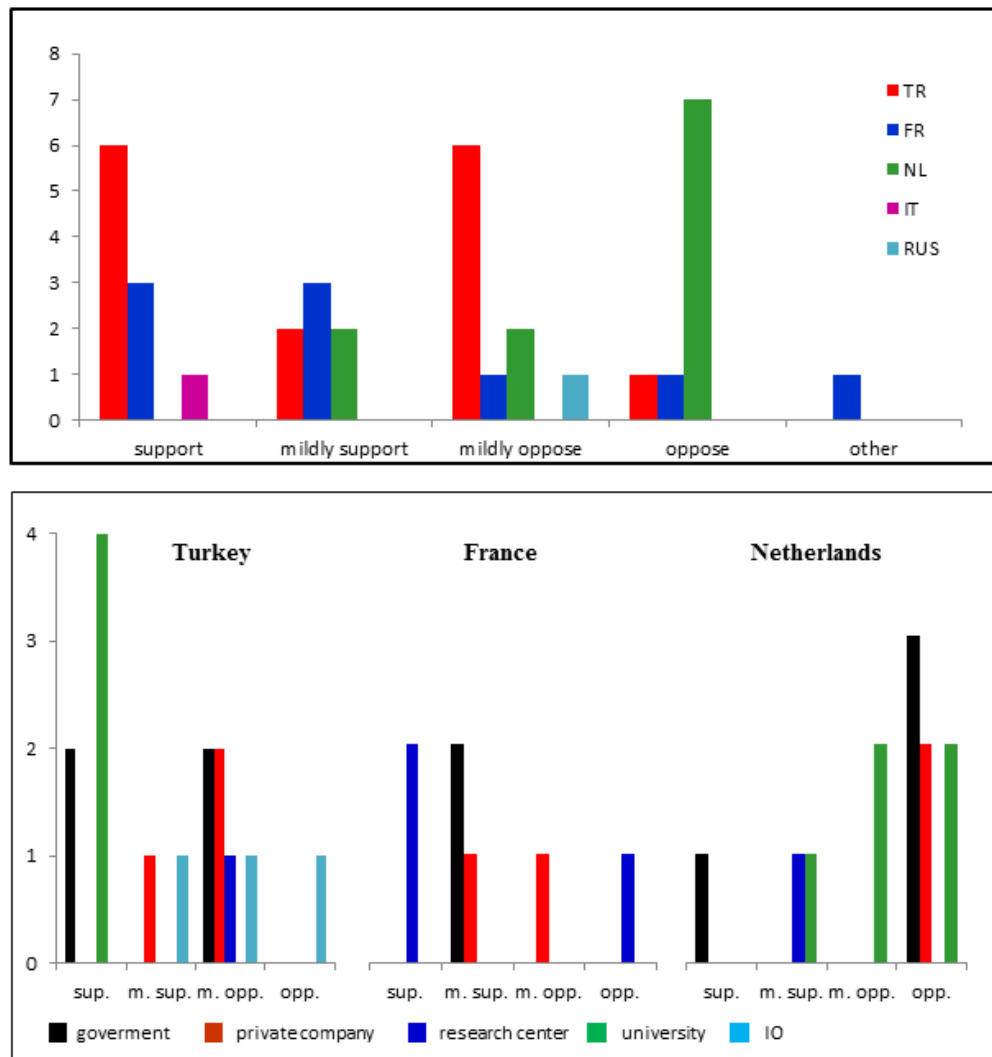
In total, the number of people interviewed is 37. But 1 person gave interviews for two countries as he/she was very familiar with both. She/he lived so long in both countries that was qualified as observer of both. Therefore there are a total of 38 Interviews. Turkey Interviewee #1 and France Interviewee # 9 (in the personal coded nicknames, FIRAT AND TARIF) are the same person, giving different views for both France and Turkey.

APPENDIX C – SUMMARY OF RESPONSES TO THE QUESTIONS

1. IS STATE INTERVENTION REQUIRED?

Support	10	(TR 6, FR 3, IT 1)
Mildly support	7	(FR 3, NL 2, TR 2)
Mildly oppose	10	(TR 6, NL 2, FR 1, Rus 1)
Oppose	9	(NL 7, FR 1, TR 1)
Other	1	(FR)

Figure A3.1. Bar graph for the responses of question number 1.



SUPPORT

- 1 FR Think Tank/ Institute
- 3 FR Think Tank
- 7 TR University
- 13 TR University
- 14 TR University
- 15 TR Rtrd MFA
- 16 FR University
- 29 IT IO in order to achieve energy independence
- 32 TR High-level Government
- 38 TR University

MILDLY SUPPORT

- 10 TR Private + NGO High-level
- 12 NL Research Center
- 18 NL University
- 25 FR Government
- 26 FR Government
- 28 FR Private Yes, but limited
- 30 TR IO

MILDLY OPPOSE

- 2 TR Research Cent. No but ok with regulation
- 5 TR IO High-level. No but in emergencies such as disasters
- 6 FR Private Company. No but ok with regulation
- 17 NL University
- 19 NL University no but
- 21 TR Normally no, but
- 34 TR High-level Government. In extreme circumstances
- 35 TR Private Company & NGO
- 36 TR High-level Government

37 Rus

OPPOSE

8 NL High-level official
11 NL High-level Government
20 NL Journalist
22 NL Government. Mr.
23 NL University
24 NL University
27 NL Private Company
31 FR Research Center
33 TR IO

OTHER

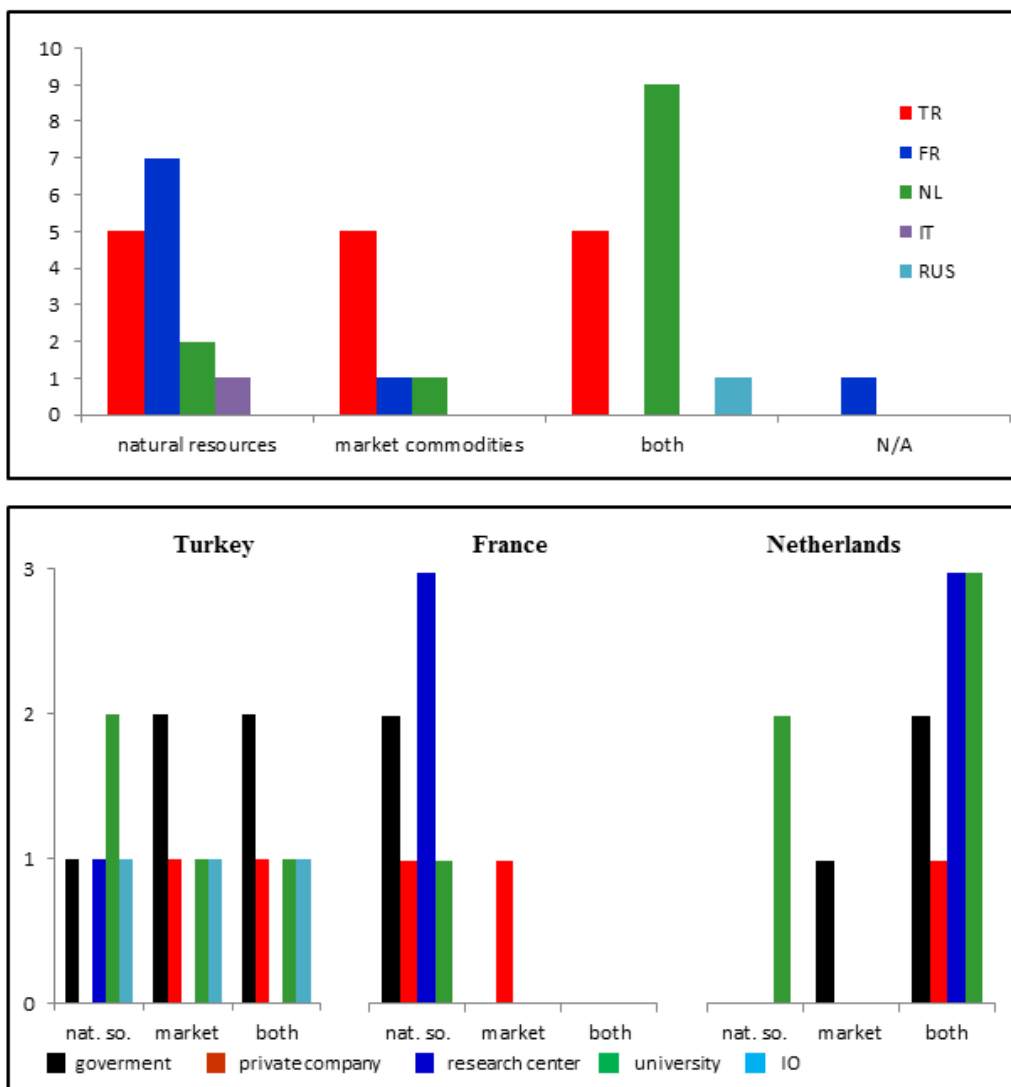
4 FR Research Center Not issue of necessary or not. Energy mix more important.

2. ARE NATURAL RESOURCES OR MARKET COMMODITIES:

National resources	15	(8 FR, 3 TR, 2 NL, 1 IT, 1 Expert on UK/FR)
Market commodities	7	(5 TR, 1 NL, 1 FR)
Both	15	(9 NL, 5 TR, 1 RUS)
N/A	1	N/A (TR/FR ?)

Note: There were those who said they are national resources but later become market commodities. These were classified as “national resources”. There were some who said they were both and explained that initially they may be national and later market. In other words some of these answers may also be classified differently. But the first point made by the responder was taken as a basis of classification.

Figure A.3.2. Bar graph for the responses of question number 2.



NATIONAL RESOURCES:

- 1 FR Does not prevent them from foing to markets later
- 2 FR But in last decade turned into market commodities
- 3 FR Think Tank High-level: Strongly national
- 5 FR Very high-level: later market
- 13 TR
- 14 TR

- 16 Expert on UK/FR priv. And academician
- 19 NL but also market commodities
- 23 NL but complex story
- 25 FR especially when under the ground
- 26 FR especially when under the ground
- 28 FR Different in different countries
- 29 IT
- 31 FR Became commodities in last yeays
- 32 TR

MARKET COMMODITIES

- 6 FR
- 7 TR
- 8 NL High-level official
- 15 TR Retrd. MFA
- 21 TR
- 33 TR Paris
- 34 TR High-level govt official

DEPENDS

- 9 NL Think Tank
- 10 TR High-Level Exec. Depends on ideology
- 11 NL High-level official: Under ground national, later market
- 12 NL High-level expert in institute
- 17 NL
- 18 NL
- 20 NL depends
- 22 NL Depends on country
- 24 NL Renewables?
- 27 NL Von Dutch: national only under the soil

- 30 TR Depends. Energy Charter Treaty aims at transforming Russia's energy from being a strategic tool, into a commodity
- 35 TR High-level official from NGO
- 36 TR High-level govt official: depends on country
- 37 Rus but first national
- 38 TR, Univ depends

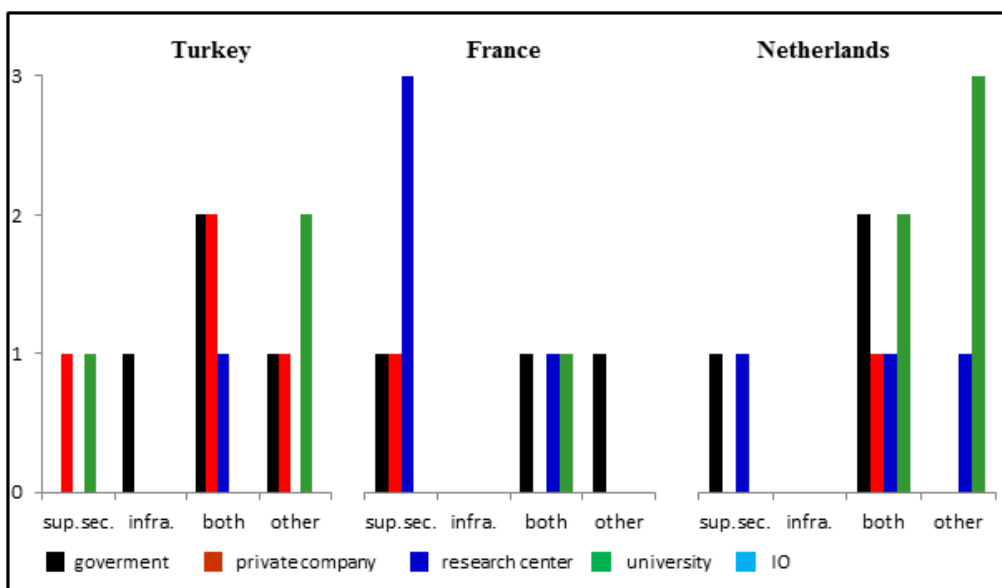
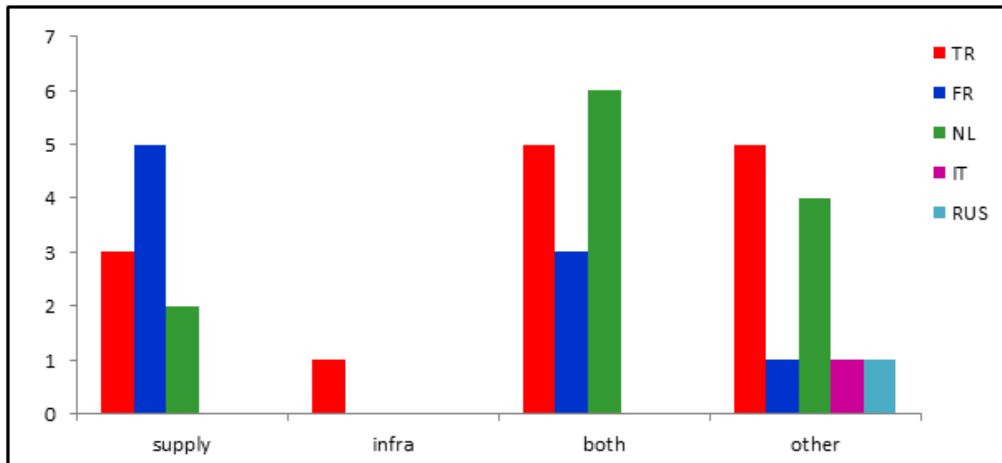
N/A

4 FR

3. IS ENERGY SECURITY; SUPPLY OR INFRASTRUCTURE?

Supply Security	10	(5 FR, 3 TR, 2 NL)
Infra	1	(TR)
Both	15	(6 NL, 4 TR, 4 FR, 1 Expert on UK/FR)
Others	12	(5 TR, 4 NL, 1 FR, 1 IT, 1 Rus)

Figure A.3.3. Bar graph for the responses of question number 3.



SUPPLY:

- 1 FR Supply, but others like transport, infra are within supply sec.
- 3 FR High-level Think Tank: Protection (of infra) is of second level
- 4 FR Infrastructure is about safety, not security
- 6 FR Dir.of priv.inst. Diversification and energy mix
- 8 NL High-level official: Regional basis
- 10 TR High-level exec: TR 75 % dependent on external sources
- 13 TR more and more supply
- 20 NL mostly supply
- 26 FR diversification, efficiency, interconnection

33 TR Especially for petroleum

INFRASTRUCTURE

15 TR Retrd. MFA: If you can't transport, then you don't have supply

BOTH

2 FR They're linked

5 FR ?

9 NL

11 NL High-level official: they are intertwined

16 Expert on UK/FR

18 NL Security of procurement including infrastructure

21 TR They're linked. But infra e bit more in the forefront

22 NL Availability and deliverability

23 NL Supply security from lack of infra or other factors

27 NL but infra is vital

28 FR infra vital

31 FR not independent from each other

34 TR High-level govt.

35 TR High level NGO, private: Diversification. Infra also imp.

36 TR High level govt: Europe is asked for 90 day stock. But diversification and supply also important

OTHERS

7 TR University, all three: supply, demand and infrastructure security

12 NL High-level expert institute: Broad concept. Depends on country, supply, infra, logistics, regulation

14 TR Supply, demand, infra and expectations of transit countries

17 NL Broad concept: Reliability and sufficiency of supply, network, logistics, infra availability and security

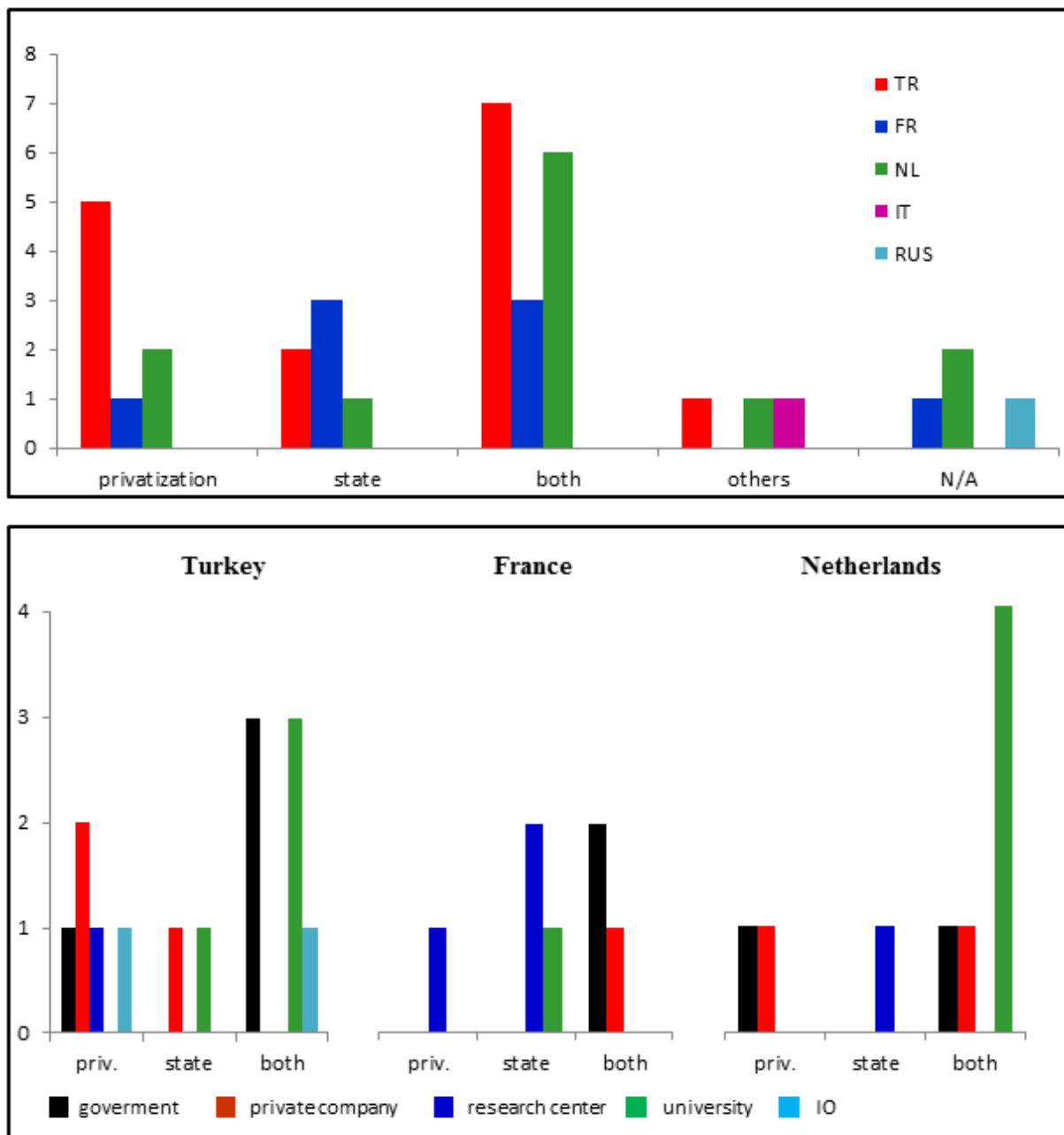
19 NL Infra, supply, demand, environment

- 24 NL Both and neither. In future renewables storage solution will be imp.
- 25 FR 4 elements: 1) better efficiency, 2) diversify types, 3) diversify sources, 4) diversify supply routes.
- 29 IT Supply and demand security according to the nation.
- 30 TR Transit infrastructure imp. For consumers supply security, for producers demand sec.
- 32 TR Supply and demand (Stable flow of energy resources between consumer and producer countries. Infra is within supply)
- 37 Rus. Demand security
- 38 TR Univ: Supply, demand and transit sec.

4. ENERGY SECURITY THROUGH PRIVATIZATION OR STATE INTERVENTION

Privatization	8	(3 FR, 3 TR, 2 NL)
State	6	(2 FR, 2 TR, 1 NL, 1 Expert of UK/FR)
Both	16	(7 TR, 6 NL, 3 FR)
Others	3	(1 NL, 1 TR, 1 IT)
N/A	4	(2 NL, 1 FR, 1 Rus.)

Figure A3.4. Bar graph for the responses of question number 4.



PRIVATIZATION:

- 2 FR, But not leave markets unchecked. Guidance
- 5 FR Very High-level: State should monitor
- 11 NL High-level official: Liberalization, interconnection, harmonizing regulation (removes barriers to bigger market)
- 12 NL High-level institute: State for oversight and good regulation. Unbundling

- 20 TR But need for strong and efficient regulatory body
- 31 FR But market should be observed, guided and regulated
- 34 TR High-level official: But there may be cases when intervention may be needed
- 35 TR High-level NGO Priv: e.g. state intervention to keep prices low would slow investments

STATE:

- 3 FR Think Tank: Market alone is imperfect
- 4 FR Maybe in future at European level intervention
- 10 TR High-level exec, SYö: If truly independent regulatory body, then no need to intervene
- 13 TR Restructuring economy to reduce energy needs and increasing efficiency done by state
- 16 Expert of FR/UK
- 23 NL Old system before unbundling (liberalization) was more secure. State should provide strategy, overview and guidance.

BOTH

- 6 FR Dir. Priv. Entrp: State should support competitiveness
- 7 TR Univ : Yes to market, but who controls the market?
- 8 NL High-level: Market but government especially on networks and renewables
- 9 NL Think Tank: State not intervene in price but security, environment, etc.
- 14 TR Can't have same model in every country
- 15 TR Retrd MFA: State not agile, but market not perfect: oligopols
- 17 NL To get in market you need state production licence for example.
- 18 NL
- 4-19 NL
- 24 NL Market can't provide 100 % supply security. Environment, strategic reserves for state to take care
- 25 FR Private financing with government authorization
- 26 FR

- 32 TR
- 33 TR International cooperation is also needed. State especially when war or disaster
- 36 TR High level govt
- 38 TR It used to be market liberalization. Now because of state capitalism, greater role for the state.

OTHERS

- 22 NL In NL oil liberalized. But gas and electricity infrastructures are state owned
- 29 IT Through global and regional cooperation and governance
- 30 TR Depends on the country

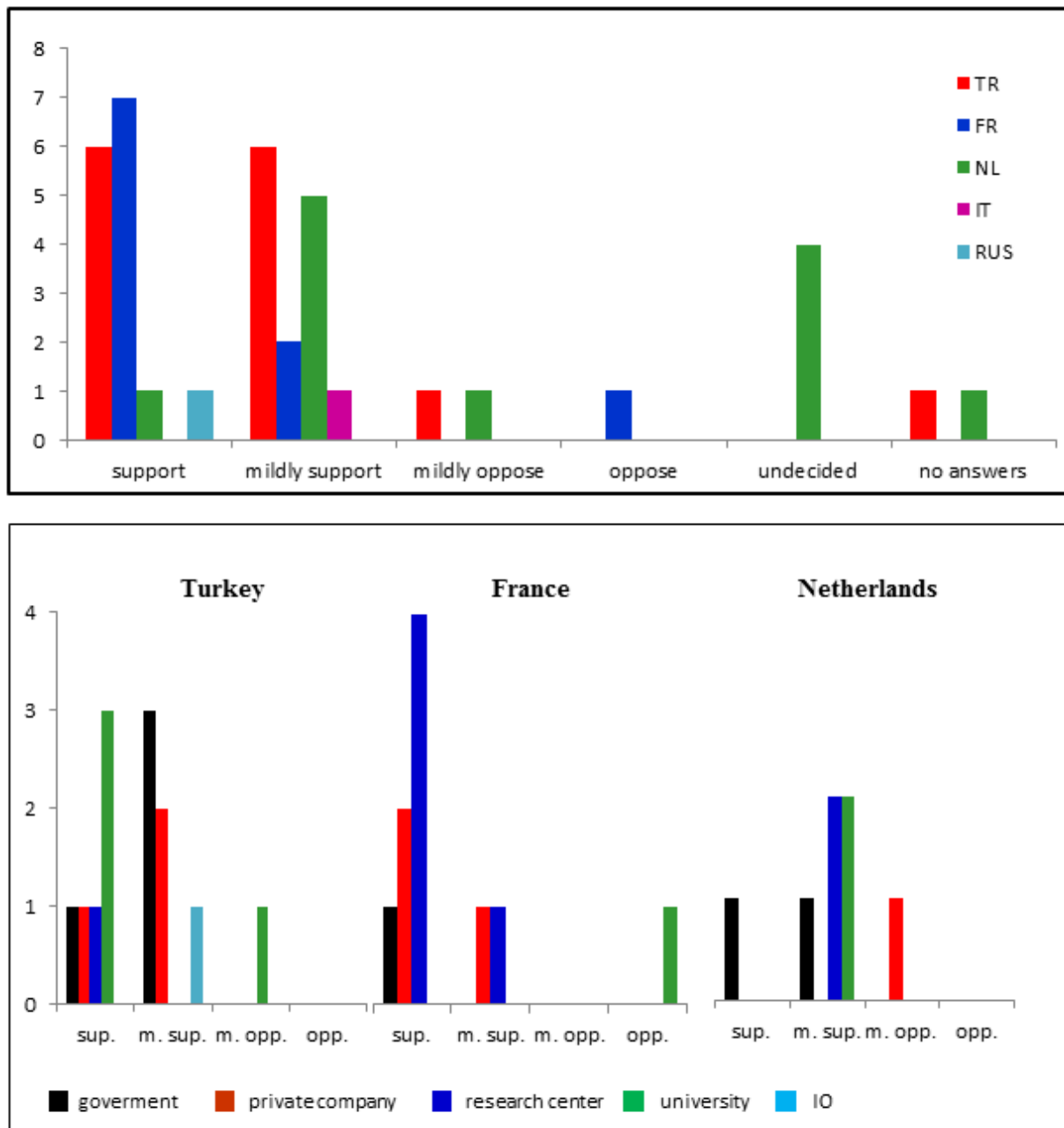
N/A

- 20 NL
- 27 NL
- 28 FR
- 37 Russia

5. NUCLEAR ENERGY IS ?

Support	15	(8 FR, 5 TR, 1 NL, 1 RUS)
Mildly Support	14	(6 TR, 5 NL, 2 FR, 1 IT)
Mildly Object	2	(1 TR, 1 NL)
Object	1	(Expert on UK/FR)
Undecided	4	(4 NL)
No answers	2	(1 NL, 1 TR)

Figure A3.5. Bar graph for the responses of question number 5.



Support:

- 1 FR
- 2 FR
- 3 FR Think Tank
- 5 FR (?) Very High-level
- 6 FR Dir. Of Private Entrpr.

7 TR Univ,
11 NL High-level official
13 TR
21 TR
25 FR
28 FR Private
31 FR
34 TR govt
37 Rus.Dipl.
38 TR Univ.

Mildly Support:

4 FR
8 NL High-level official
9 NL Think Tank
10 TR High-level exec.
12 NL Institute
15 TR Retrd. MFA
18 NL
19 NL
26 FR
29 IT
30 TR
32 TR
35 TR High-level NGO
36 TR High-level official

Mildly Oppose

14 TR
20 NL

Oppose

16 Expert on UK/FR

Undecided

17 NL

22 NL

23 NL

24 NL

No Answer

27 NL No answer

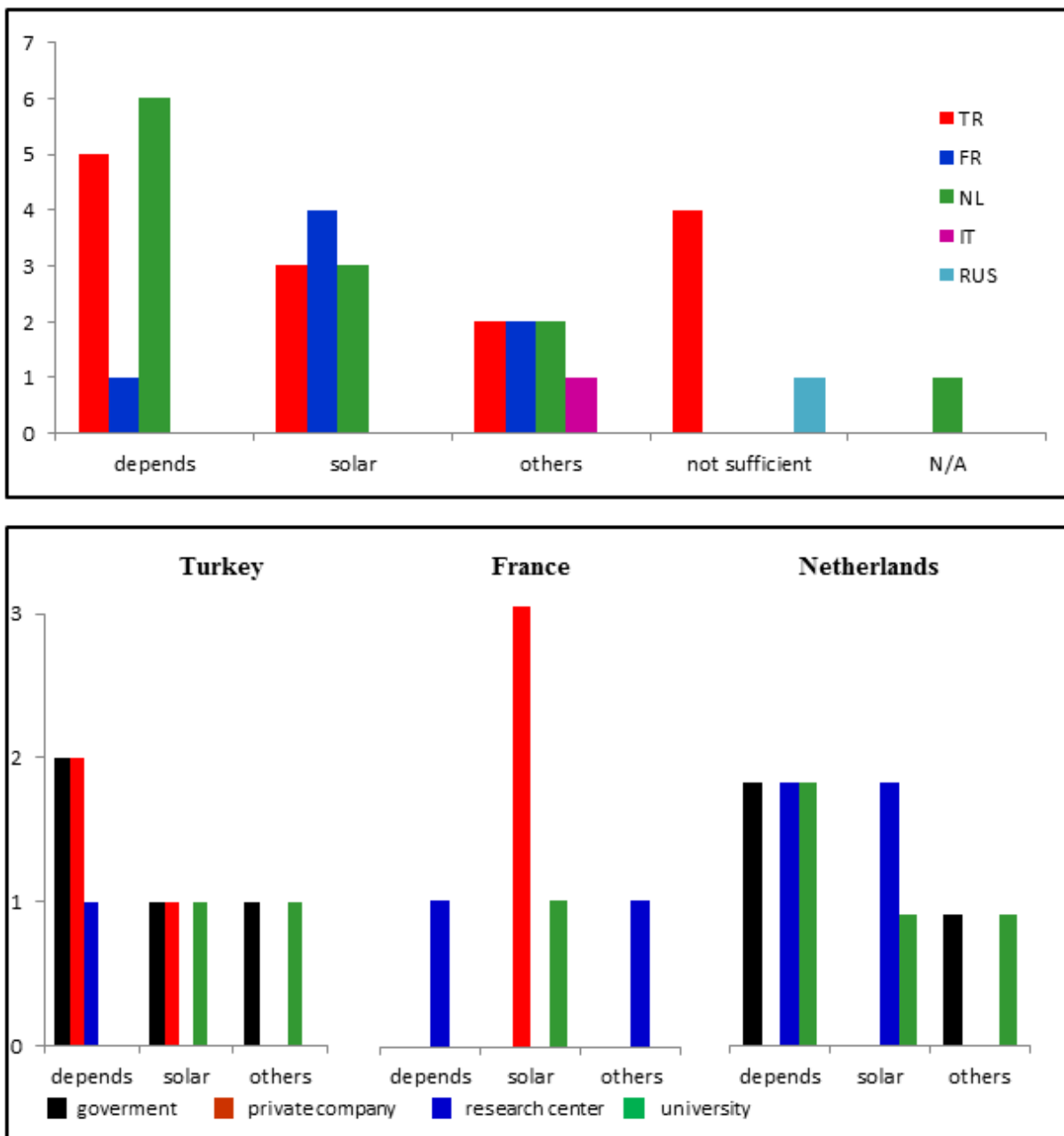
33 TR No answer

6. RENEWABLES

Depends	12	(6 NL, 4 TR, 2 FR)
Solar (and)	10	(3 FR, 3 NL, 3 TR, 1 Expert on UK/FR)
Others	7	(2 NL, 2 FR, 2 TR, 1 IT Energy Charter)
Not Sufficient	5	(4 TR, 1 Rus)
N/A	1	(NL)

NOTE. 8 respondents also listed wind, making it the second most promising after solar

Figure A3.6. Bar graph for the responses of question number 6.



DEPENDS

- 2 FR Depends on location
- 11 NL High-level: Depends on location. Solar growing
- 17 NL On geography
- 18 NL On geography
- 20 NL Depends on market and geography

- 21 TR Geography
- 22 NL Geography
- 24 NL CbVL Depends on country
- 31 FR OM
- 34 TR High-level official: Also good for environment and global warming
- 35 TR High-level NGO: Each have limits and require subsidies. Also there's hydrogen.
- 36 TR High-level gov: Technology has to advance

SOLAR (AND)

- 3 FR Think Tank: Depends on location but most promising solar/photovoltaic. Oil will still be needed for transportation
- 6 FR Dir. Priv: Depends but solar first.
- 9 NL Think Tank: Wind has horizontal pollution problem
- 10 TR High-level official: Solar and others but not commercially attractive yet
- 12 NL High-level instite: Markets to decide. Depends on technology. Solar and wind in the lead
- 13 TR Solar in the long run
- 15 TR Retrd. MFA
- 16 Expert on UK/FR Solar and wind
- 19 NL
- 28 FR Solar and wind huge potentials if storage resolved

OTHERS

- 4 FR Wind and solar, but wind has problems of protests. Hydro imp for FR
- 8 NL High-level: Need all renewables but efficiency is most important
- 14 TR Efficiency
- 23 NL Wind (off-shore)
- 25 FR Each has some problems: Hydro weak capacity, solar subsidy controversial, intermittency for wind and solar

- 29 IT International Renewable Energy Agency (IRENA). EU's renewable target for 2050 is 30%
- 32 TR Turkey rich in renewables: Solar, hydro, geothermal, wind,

NOT SUFFICIENT:

- 7 TR Not hopeful in Turkey despite rich potential
- 30 TR At this stage for Turkey renewables are complementary and not substitute. Potential for solar.
- 33 TR Io Bio
fuel, wind: But they have their problems
- 37 Rus Complementary, not substitute. Heavily subsidized, cannot compete in markets
- 39 TR Univ: Local and clean. But price and intermittency problems. Complementary. With technological development, solar is most promising.

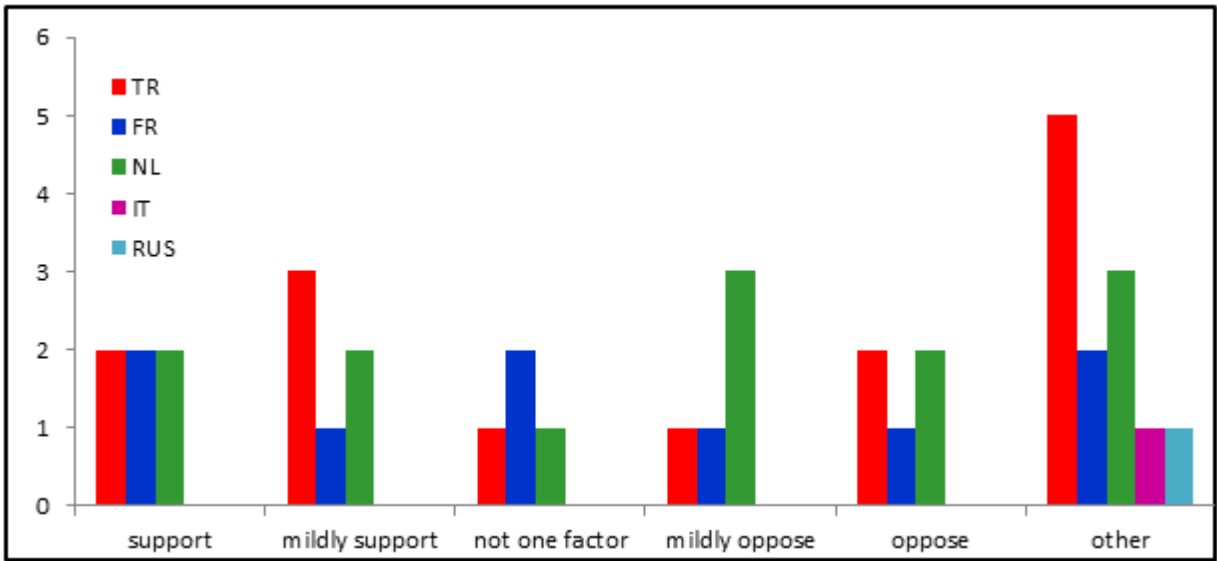
N/A

- 27 NL

7 . WAS US OPERATION IN IRAQ FOR OIL?

Support	5	(TR 2, FR 1, NL 1, Expert on UK/FR 1)
Mildly support	6	(TR 3, NL 2, FR 1)
Not one factor	4	(FR 2, NL 1, TR 1)
Mildly oppose	5	(NL 3, FR 1, TR 1)
Oppose	5	(TR 2, NL 2, FR 1)
Others	12	(TR 4, FR 3, NL 3, Rus 1, IT Energy Charter 1)

Figure A3.7. Bar graph for the responses of question number 7.



SUPPORT

- 4 FR
- 10 TR High-level exec
- 16 Expert on UK/FR
- 23 NL
- 30 TR

MILDLY SUPPORT

- 3 FR Think Tank, 60% petroleum, not democracy
- 7 TR mostly petroleum
- 13 TR
- 14 TR Everybody knows it's the real reason
- 20 NL important consideration
- 22 NL

NOT ONE FACTOR

- 1 FR

15 TR Retrd MFA
19 NL was a factor
31 FR not only reason

MILDLY OPPOSE

2 FR High-level official, perhaps important but not number 1 reason
9 NL Think Tank, not main reason
18 NL Secondary
21 TR not for oil but maybe for access to oil
24 NL to make oil accessible to markets

OPPOSE

6 FR Dir. Priv.
8 NL High-level official
12 NL High-level institute
33 TR conspiracy theory
34 TR Io, Conspiracy

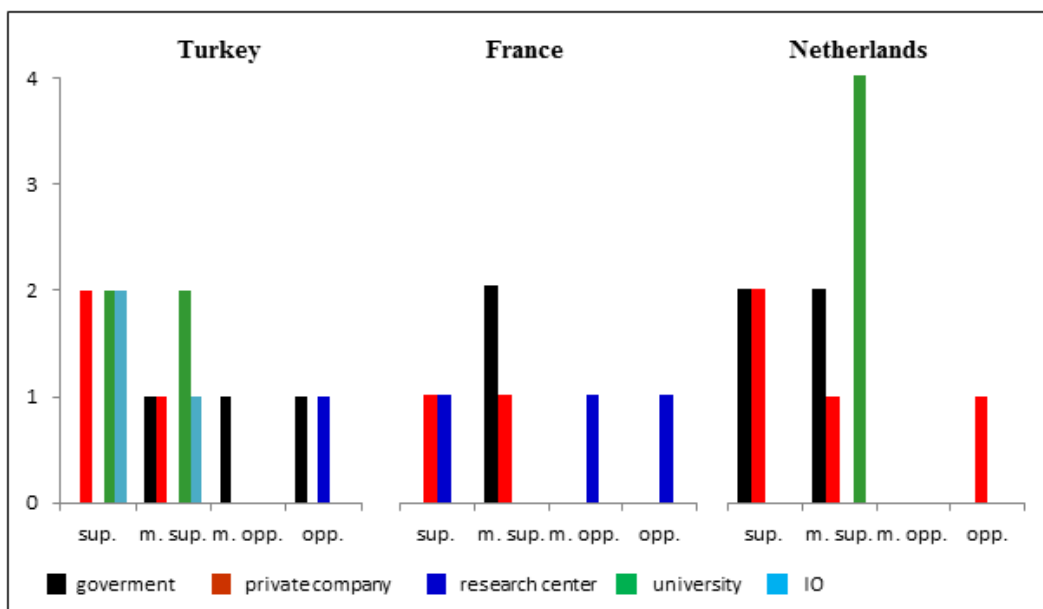
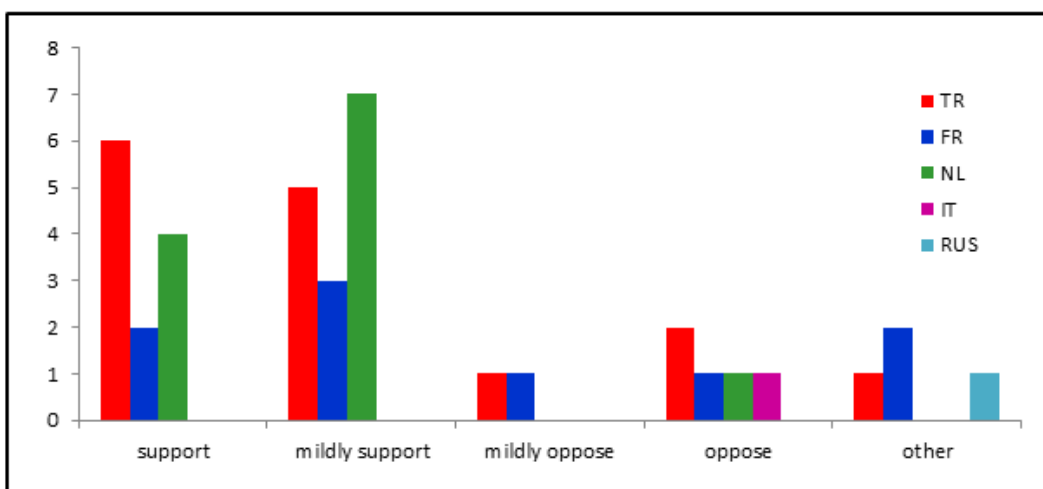
OTHERS

5 FR Very high-level, US to answer
11 NL High-level official, don't know
17 NL N/A
25 FR no comment
26 FR not much to say
27 NL No comment
29 IT N/A
32 TR N/A
35 TR High-level NGO, priv. No comment
36 TR High-level gov
37 Rus N/A
38 TR N/A

8. IS RUSSIA USING NATURAL GAS AS A TRUMP CARD AGAINST THE EU?

Support	12	(TR 6, NL 4, FR 2)
Mildly support	15	(NL 7, TR 5, FR 3)
Mildly oppose	2	(FR 1, TR 1)
Oppose	5	(TR 2, FR 1, NL 1, IT Io 1)
Other	4	(FR 2, TR 1, Rus 1)

Figure A3.8. Bar graph for the responses of question number 8.



SUPPORT

3 FR Research
5 TR Io
8 NL High-level gov
9 NL Research
10 TR NGO Priv
11 NL High-level gov
12 NL Research
13 TR
14 TR
28 FR Priv
33 TR Io
35 TR NGO

MILDLY SUPPORT

6 FR Priv, Yes but Ukraine's fault
7 TR Univ, Ukraine also not innocent
15 TR Retrd MFA
17 NL Univ, had impact
18 NL Univ
19 NL Univ
20 NL yes but they hurt themselves
21 TR yes but Germany still deals bilaterally with Nord Stream
22 NL Gov.
23 NL
24 NL Univ, at company level solid relations
25 FR Gov Yes but FR and GER
26 FR Gov. yes but
30 TR Io
37 TR Univ. Yes but no common European policy

MILDLY OPPOSE

- 1 FR There is interdependence. But has affected EU
34 TR High-level gov, It is more market and monopoly issue

OPPOSE

- 2 TR Research , There's a Russia-phobia
27 NL Priv
29 IT Io
31 FR Research, Russia-phobia in Europe
32 TR

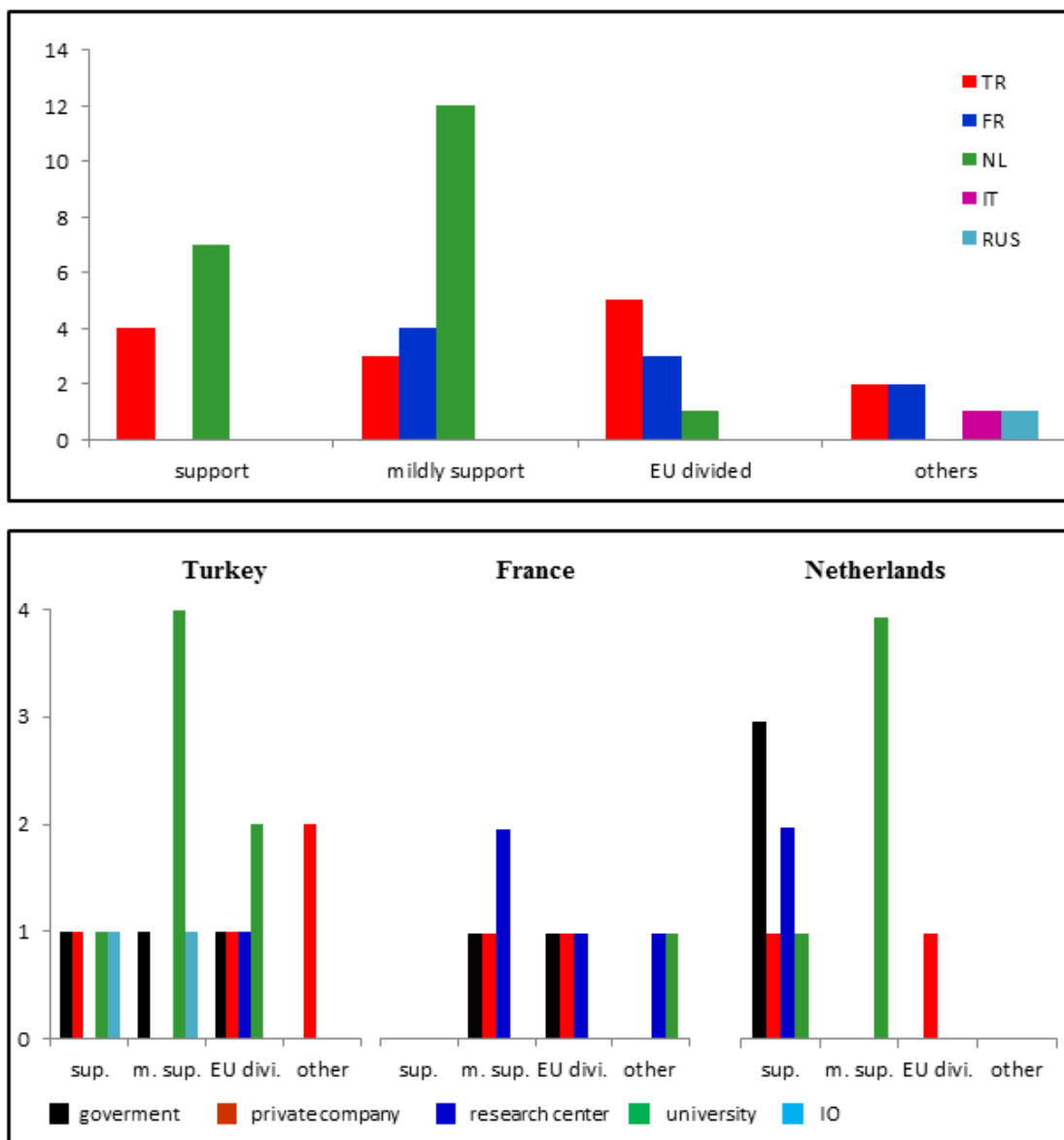
OTHERS

- 4 FR Research, Russia has by-passes
16 FR Univ. Don't know
36 TR High-lev gov
37 Rus N/A (question skipped)

9 . DID RUSSIA-UKRAINE CRISIS CAUSE A SHIFT IN EU POLICY?

Support	11	(NL 7, TR 4)
Mildly support	12	(NL 4, FR 4, TR 3)
EU Divided	9	(TR 5, FR 3, NL 1)
Others	6	(TR 2, FR 2, Rus 1, It Io 1)

Figure A3.9. Bar graph for the responses of question number 9.



SUPPORT

- 8 NL Gov High-level
- 9 NL Research
- 10 TR NGO Priv
- 11 NL High-level gov
- 12 NL Research
- 13 TR Univ
- 20 NL

- 22 NL gov
- 24 NL Univ, yes drastic change, but at company level ok
- 30 TR Io
- 36 TR high-level gov

MILDLY SUPPORT

- 1 FR Affected but there is interdependence
- 3 FR Research, Raised awareness, but little change in the long run
- 5 TR Io, High-level, Raised awareness, but for Russia it is self-inflicted
- 6 FR Priv. Raised awareness but Ukraine's fault
- 7 TR Univ. Raised awareness but Ukraine's fault
- 15 TR Rtrd MFA, Yes but not great strides
- 17 NL Univ. Yes but there is interdependence
- 18 NL Univ, yes but little change
- 19 NL Univ, yes but little change
- 23 NL Univ, increased awareness but slow
- 26 FR Gov, Caused more coordination and interconnection

EU DIVIDED

- 2 TR Research some have russiaphobia, whereas GER has good relation with Russia
- 14 TR Univ,
- 21 TR
- 25 FR Gov,
- 27 NL Priv
- 28 FR Priv , need for more solidarity in EU
- 31 FR Research , Russia-phobia
- 32 TR high-level official
- 37 TR Univ

OTHERS

- 4 FR Research, by-pass?

16 FR Univ, N/A
 29 IT Io, there is EU-Russia dialogue
 34 TR High-level , EU shifts for market reasons
 35 TR NGO, market
 37 Rus, N/A (question skipped)

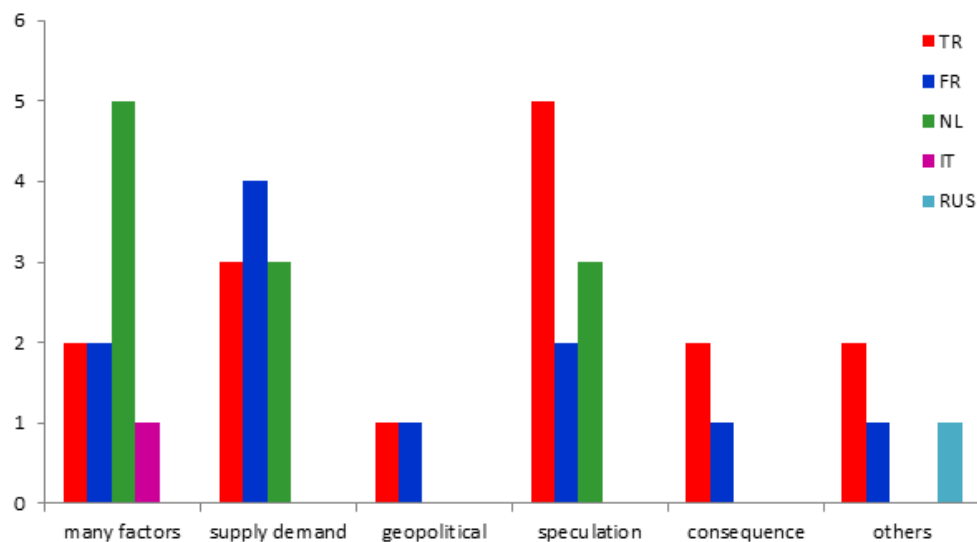
10. PRICES HISTORIC HIGHS, REASONS AND CONSEQUENCES/

Many factors	10	(NL 5, TR 2, FR 2, IT Io 1)
Supply Demand	10	(FR 4, TR 3, NL 3)
Geopolitical	2	(FR 1, TR 1)
Speculation	10	(TR 5, NL 3, FR 2)
Consequences	3	(TR 2, FR 1)
Others	4	(TR 2, FR 1, Rus 1)

(Note1 : The classification categories “Consequences” and “Others” can be combined.

Note 2: 10/3 is repeated in 2 categories, i.e. many factors and consequences.)

Figure A3.10. Bar graph for the responses of question number 10.



MANY FACTORS, COMPLEX ISSUE

- 3 FR Think Tank, volatility, demand
- 4 FR Research
- 9 NL Research
- 10 TR NGO Priv
- 17 NL Univ
- 18 NL Univ
- 20 NL
- 27 NL Priv.
- 29 IT Io
- 32 TR High-level gov

SUPPLY AND DEMAND (DEMAND INCREASE IN EMERGING MARKETS ESPECIALLY)

- 1 FR
- 8 NL Gov
- 22 NL Gov
- 24 NL Univ Research
- 25 FR Gov
- 26 FR Gov
- 31 FR Io
- 33 TR Io
- 34 TR High-level gov
- 35 TR NGO + speculation

GEOPOLITICAL CRISES

- 1 FR
- 38 TR Univ, Geopolitical crises affect psychologically and also cause speculation

SPECULATION

- 2 TR Paper barrels
- 5 TR Io

- 6 FR Priv. Volatility (price rise, consumers import less, producers sell less, prices fall =cycle)
- 7 TR Univ
- 11 NL High level gov.
- 12 NL Research, volatility
- 13 TR Univ
- 16 FR Univ
- 21 TR
- 23 NL Univ

CONSEQUENCES

- 3 FR Think Tank Triggered unconventional and efficiency
- 14 TR Univ, Weakens consumer economies, strengthens produces and multinationals
- 15 TR Rtrd MFA But when consumers are hurt, then import less, producers are hurt, cycle

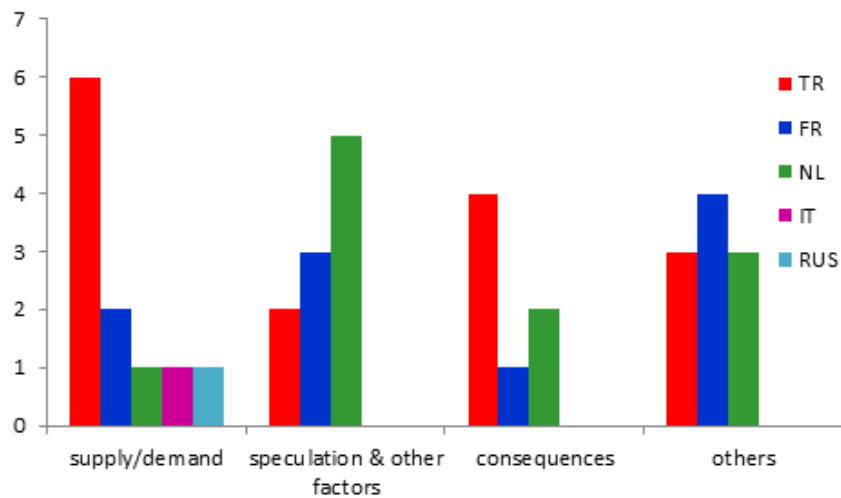
OTHERS

- 28 FR Priv N/A
- 30 TR Io , no clear answer but draws attention to cycle issues
- 36 TR high-level gov N/A
- 37 Rus volatility, requires diversification of economies of producers

11. PRICE FALLS, REASONS, CONSEQUENCES?

Supply/demand (economic)	11	(TR 6, FR 2, NL 1, IT 1, Rus 1)
Speculation and other (many)	10	(NL 5, FR 3, TR 2)
factors		
Consequences	7	(TR 4, NL 2, FR 1)
Others	10	(FR 4, NL 3, TR 3)

Figure A3.11. Bar graph for the responses of question number 11.



SUPPLY/DEMAND

- 1 FR Economic crisis leading to reduced demand (and reduced investment)
- 15 TR Retrd MFA , Producer/consumer balance i.e. supply/demand
- 27 NL Univ, Economic factor (+ geopolitical factors which feed into economic factors such as demand)
- 29 IT Io, Economic crisis leading to reduced demand
- 30 TR Io , Cycle of low and high prices (Demand falling, price going down, investments down, supply eventually down, prices up)
- 31 FR Research
- 32 TR lower demand
- 33 TR Io, lower demand
- 34 TR High-level gov official
- 35 TR Priv NGO
- 37 Rus

SPECULATION + OTHER FACTORS

- 6 FR Priv
- 7 TR Univ, Speculation causes ups and downs
- 10 TR NGO , Shale oil and other factors
- 11 NL High-level gov, speculation + other causes

- 18 NL Univ
- 19 NL speculation + many factors
- 20 NL Complex reasons
- 23 NL Univ, Traders should be transparent (to control speculation)
- 25 FR Gov. , Speculation on geopolitical events. Stability is important
- 31 FR Research , Lehman Brothers, speculations

CONSEQUENCES

- 2 TR Research , puts economic, political and social pressure on producer countries
- 8 NL High-level govt, Pressure on producer countries' revenues
- 9 NL Research, leads to less investment and bad for environment
- 13 TR Univ, Pressure on producers, Middle East countries become more vulnerable
- 14 TR Univ, Pressure on producers and investments, less investment leads to less production which leads to higher prices eventually, (i.e. cycle and volatility)
- 16 FR Univ, Can't say consumer governments will be worried for price falls, but prices will eventually rise
- 21 TR affects producers at every stage

OTHERS

- 3 FR Think Tank, Stability, i.e. avoiding volatility is more important than prices. Should go for alternatives, renewables and unconventional new resources. Cheap oil era is over.
- 4 FR Research N/A
- 5 TR Io, Cheap oil era is over
- 12 NL Research, Price not as important as Stability, (i.e. avoiding volatility)
- 22 NL Gov. N/A
- 24 NL Univ. stability imp
- 26 FR Gov, Stability imp
- 28 FR Priv, N/A
- 36 TR High-level gov, N/A
- 38 TR Univ. Conflicts like Russia and Georgia



APPENDIX D – THREE DOMINANT COMMON RESPONSES WITH MORE DETAIL

CHEAP OIL ERA IS OVER ?!.

7 Respondents mentioned it. 1 respondent mentioned it in connection with 4 questions, 3 respondents in connection with 2 questions. Therefore, it was mentioned 13 times by 7 respondents.

REGULATION:

The issue of regulation was mentioned in 13 interviews. This is something important because it influenced the direction of the research and conclusion of the dissertation. (Only mentions of regulation itself were considered, and not the responses that mention of the need for state intervention).

NUCLEAR ENERGY:

There was a much stronger approval of nuclear energy as a necessity than was expected. Furthermore, this approval was not just high in France, but also in Turkey, and even relatively in the Netherlands. 15 Support, 14 Mildly Support, 2 Mildly Object, 1 Object, 4 Undecided, 2 NA

APPENDIX E – INSPIRATION TO THE 2 X 2 TABLE; THE ARROW DIAGRAM WITH ATTRIBUTES ORIGINALLY ENVISAGE FOR DESCRIBING HOW THE POLICY AND INCLINATIONS

Prior to developing 2 x 2 Table, the arrow diagram with attributes originally envisage for describing how the policy and inclinations is given below:

$J_i (g)$	$\xrightarrow{r}$	$F_i (g, C_n) \text{ (expected)}$
$J_i (m)$	$\xrightarrow{r}$	$F_i (m, C_n) \text{ (expected)}$
$J_i (g)$	$\xrightarrow{r}$	$F_i (m, C_n) \text{ (interesting)}$
$J_i (m)$	$\xrightarrow{r}$	$F_i (g, C_n) \text{ (interesting)}$
where for $i = 1$ to 4 and $n = 1$ to 4		
J_i : critical events, independent variable, input		
F_i : policy preferences and inclinations, dependent variable, output		
g : geopolitical		
m : market oriented		
C_n : conditional variables		
r : series of reactions and interactions, intervening variable		

However, as the research and dissertation progressed to be more historical and qualitative, the simpler chart of events/countries is used, focusing on short or long term adjustments (DMA or EGA) that link the critical events and the policy outcomes.

APPENDIX F – ORIGINAL PRESS STATEMENT (IN FRENCH) OF MR. LELLOUCHE
ON 14 SEPTEMBER 2009

(Accessed from the French Foreign Ministry Website: <http://www.diplomatie.gouv.fr/fr/politique-etrangere-de-la-france/europe/evenements-et-actualites-lies-a-la-politique-europeenne-de-la-france/conseils-affaires-generales-et-affaires-etrangeres/precedents-cag-cae/article/conseil-affaires-generales-et-76416#>)

Sur la politique de l'énergie, je voudrais simplement rappeler plusieurs points. D'abord rendre hommage à la Commission qui a fait un travail extrêmement utile s'agissant des mesures d'urgence qu'il convient de prendre en cas de crise, on a eu des crises l'an dernier, un certain nombre de travaux sont prêts du côté de la Commission et qui vont dans le bon sens. Au-delà, je crois que maintenant le moment est venu de faire de l'énergie un dossier prioritaire pour ce que j'appelle la nouvelle Europe c'est-à-dire une fois que, d'une façon ou d'une autre, et j'espère avec le Traité de Lisbonne, nous aurons clos le chapitre institutionnel.

Une fois que nous aurons clos le chapitre institutionnel il va falloir faire de la politique en Europe et enfin prendre à bras le corps les grands problèmes qui sont devant nous. L'un de ces problèmes, c'est celui de l'énergie : je rappelle que l'énergie a été à la base de l'idée même de construction européenne, la construction européenne a commencé avec la CECA et avec l'EURATOM : le charbon, l'acier avaient été à l'origine de beaucoup de guerres et de conflits entre les pays européens, aujourd'hui nous sommes dans une situation à la fois de très grande hétérogénéité de politique énergétique qu'il s'agisse du nucléaire, certains sont pour, d'autres sont contre, de niveau de développement des énergies renouvelables ou de dépendance à l'égard de pays fournisseurs. Je prends un exemple : la péninsule ibérique, où je me suis rendu au début du mois : elle n'est pas du tout dépendante en matière d'importation de gaz venu de Russie, certains pays en Europe centrale, les Etats Baltes, la Bulgarie ou d'autres, sont dépendants à 100 % pour leurs importations de gaz en provenance de Russie. Pour l'instant ce qui frappe c'est que nous avons en face de nous un fournisseur qui a une stratégie en matière de tuyaux, qui a une stratégie en matière de livraisons aux différents États européens - pris un par un d'ailleurs - et qu'en face, nous n'avons pas de politique commune, et nous avons des pays pris isolément et on est donc dans la tactique du saucissonnage, des tranches de salamis...

Ce que nous souhaitons nous, c'est une relation stable d'interdépendance mutuelle avec la Russie que nous considérons comme un partenaire et un ami, pays ami mais cela ne veut pas dire que ce partenariat doit être déséquilibré. Pour que ce partenariat produise de la sécurité pour tout le monde, pour le fournisseur comme pour les acheteurs, il faut qu'il soit le plus équilibré possible, d'où l'idée lancée par le président de la République, de regrouper les achats ce qui rend les acheteurs plus forts, par rapport au fournisseur, centrale d'achat ou achats groupés serait une des façons d'y arriver. En tout cas, l'énergie sera une de nos priorités dans nos relations avec l'Allemagne sur lesquelles nous travaillons beaucoup puisque nous sommes très activement en train de préparer les relations franco-allemandes après l'élection du 27 septembre et dans cette relation, le chapitre énergie sera absolument primordial ainsi d'ailleurs que d'autres chapitres qui sont liés comme par exemple les technologies vertes. Mais l'énergie c'est un élément stratégique, je l'ai dit devant les Ambassadeurs il y a deux ou trois semaines, qu'il convenait maintenant pour les Européens de réapprendre la géopolitique et de reprendre en main, de reconquérir leur propre géopolitique à l'échelle du monde, reconquérir la géopolitique cela veut dire d'abord, gérer leur énergie, nous sommes dépendants, à nous de réduire cette dépendance, de diversifier les approvisionnements, de diversifier les modes d'énergie mais aussi, à l'égard de nos fournisseurs, de bâtir une relation d'interdépendance plus équilibrée qu'elle ne l'est aujourd'hui et cela passe par de vraies coopérations à commencer par la France et l'Allemagne mais avec d'autres aussi, sujet que j'ai donc abordé tout à l'heure avec mon homologue polonais et nous allons continuer ce travail cette semaine à Varsovie.

Voilà le compte rendu très rapide de cette journée de travail à Bruxelles qui vous le voyez s'appuie sur beaucoup de travail à Paris et une vraie volonté de faire bouger les lignes sur des sujets importants au-delà de la seule question des institutions.

APPENDIX G –LISTS OF MAJOR ACTORS DRIVING ENERGY POLICY IN TURKEY,
FRANCE AND NETHERLANDS

Table A. LIST OF MAJOR ENERGY ACTORS DRIVING TURKISH ENERGY POLICY

FORMAL	INFORMAL
GOVERNMENT	NON-GOVERNMENT
Presidency (according to the tasks of the president as described in the constitution)	Private Sector (Koc Holding, EnerjiSA, ZorluEnerji, Guris, Gama, Akfen, Calik Enerji, etc.)
Prime Minister’s office (Including Invest Turkey Investment Promotion agency).	Academia (including individual academics and formal research centers)
Ministry of Energy (and subordinate DGs on Petroleum-PIGEM, Mining-MIGEM, MTA, etc.)	Think Tanks (SAM, SETA, ORSAM, TEPAV, BILGESAM, EDAM, USAK, are a few examples)
Energy Market Regulatory Authority	NGOs (ex: Greenpeace, GENSED-Solar, ETD-Energy Traders Association, TUREB-Wind, PUIS-Petroleum,)
Ministry of Foreign Affairs	
Ministry of Forestry and Water (including the DG for State Hydraulic Works).	
Ministry of Environment and Urban Planning	
Ministry for EU Affairs	
Armed Forces (physical security)	
Ministry of the Interior (police-physical security).	World Energy Council (Turkish National Committee)

Table A.8.1 continued

STATE COMPANIES	
Turkish Petroleum (TPAO)	GAZPROM
BOTAS	Akkuyu Nukleer (ROSATOM) (Foreign Direct Investor such as General Electric's partnership with GAMA.)
International Companies/Conglomerates Intergovernmental Agreements:	
BTC Company	BP
TANAP	General Electric and GAMA.

Table A8.2. LIST OF MAJOR ENERGY ACTORS DRIVING FRENCH ENERGY POLICY

FORMAL	INFORMAL
GOVERNMENT:	NON-GOVERNMENT:
Presidency (according to the tasks of the president as described in the constitution)	Private Sector (major domestic companies): Total, Engie, AREVA , SUEZ Environment, VEOLIA etc.
Prime Minister's office	Academia (including individual academics and formal research centers)
Ministry of Environment and Energy	Think Tanks (IFRI and IRIS are a few examples)

French Energy Regulatory Agency Nuclear Energy Regulatory Agency	NGOs
Ministry of Foreign Affairs	
Ministry of Environment and Urban Planning	
Ministry for EU Affairs	
Security Forces (jandarmerie) (physical security)	
Ministry of the Interior (police-physical security).	World Energy Council (French National Committee)
STATE COMPANIES:	
EDF	GAZPROM ?
TOTAL ENGIE	
International Companies/Conglomerates Resulting from Intergovernmental Agreements:	

Table A.8.3. LIST OF MAJOR ENERGY ACTORS DRIVING DUTCH ENERGY POLICY

FORMAL	INFORMAL
GOVERNMENT:	NON-GOVERNMENT:
Constitutional Monarchy (accordingly the Monarch has a symbolic role as described in the constitution)	Private Sector (major domestic companies): Royal Dutch Shell.

Prime Minister's office and Dutch Cabinet.	Academia (including individual academics and formal research centers)
Ministry of Economic Affairs Ministry of Environment	Think Tanks (ex: Clingendael Institutes)
Office of Energy Regulations under the Authority for Consumers and Markets.	NGOs
STATE COMPANIES:	
Port of Rotterdam Authority Port of Groningen Authority	GAZPROM ?
International Companies/Conglomerates Resulting from Intergovernmental Agreements:	

APPENDIX H - TURKEY'S MAJOR DEVELOPMENTS CONCERNING ENERGY SECURITY

Major pipelines projects involving Turkey

- BTC
- BTE
- TANAP-TAP
- Blue Stream
- Turkey-Iran pipeline
- South stream
- Nabucco (Intergovernmental Agreement signed in 2009, but project not realized)

Major Domestic Developments for the energy mix and energy markets (Internal)

- Akkuyu Nuclear Power Plant
- Energy Markets Regulatory Authority (EPDK/EMRA) created by Law 4628 of 2001
- Development of wind and other renewables in the last decade (According to the World Bank, the regulatory framework for renewables and development of electricity market facilitated 16,000 MW generation capacity addition based on renewable sources in the 2001-2014 period)
- Improving Energy Efficiency (notably in buildings, Sekerbank's Eko-Kredi programs)
- Renewable Energy Law, ratified by parliament on December 2010, giving generous incentives (FITs of €7.3–13.3/kWh) to encourage energy production from renewables .
- Law 6446 of 14 March 2013 on electricity market, eventually paving the way for the creation of an energy financial market (i.e. EPIAS)
- Creation of Energy Exchange Istanbul (EXIST/EPIAS) in 2015 an energy day-ahead stock market, instead of government deciding the price (intended to slowly replace PMUM).

APPENDIX I - MAPS OF PIPELINES



Figure A.10.3. Incoming gas pipeline routes to Europe (“Conscious uncoupling,” 2014).

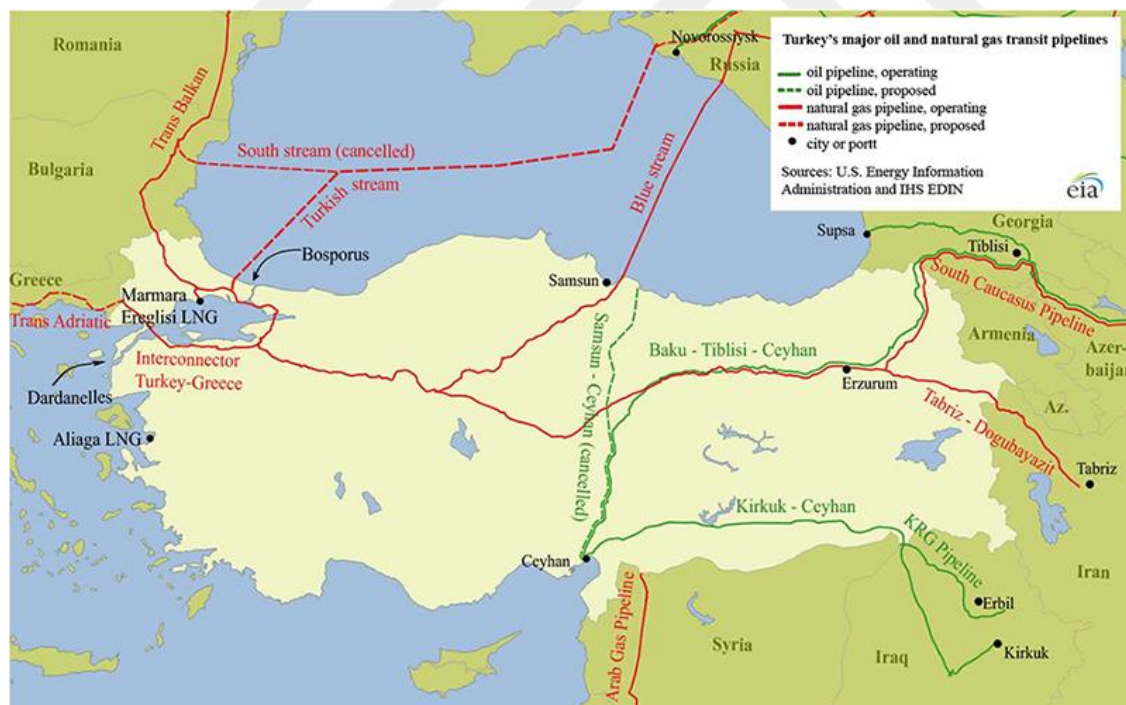


Figure A.10.5. Map of pipelines from and to Turkey (Source: EIA) (note: contrary to the indication on the map below, South Stream is replaced by Turkish Stream, but Arab-gas is unlikely at the moment, instead gas from Israel is a possibility.)



Figure A.10.6. The energy pipelines map from the Turkish Ministry of Foreign Affairs no longer shows the Arab gas pipeline, and clearly shows TANAP. However, the map doesn't show the renewed (or un-canceled) south stream with Russia. (mfa.gov.tr , Access 13 April 2017)



Figure A.10.7. Trans Anatolian natural gas pipeline project, TANAP
(<http://www.tanap.com/tanap-project/why-tanap/> , Accessed 26 March 2017)

One of the most important of those is arguably the Trans-Anatolian Pipeline (TANAP) project, also a consortium led by the State Oil Company of Azerbaijan Republic (SOCAR), the BOTAS, and also BP.^{68 69}



Figure A.10.8. Trans-Anatolian Pipeline (TANAP)

⁶⁸ <http://www.tanap.com/media/press-releases/major-shareholder-in-the-project-of-the-century/>

⁶⁹ Map from TANAP website main page: <http://www.tanap.com/>

APPENDIX J - ILLUSTRATIONS, FIGURES AND OTHER MAPS



Figure A.10.8. Russia-Ukraine in gas war

RUSSIA - UKRAINE in gas war - COLOR#59652 , BY CHRISTO KOMARNITSKI,
BULGARIA - 8/2009 12:00:00 AM (publication rights purchased by Ali Oguz Dirioz Order
Number/ Invoice #: 1068408 for 1 x Publication (non-book) Circ UNDER 500 License(s) for
cartoon #59652 "RUSSIA - UKRAINE in gas war - COLOR" by Christo Komarnitski).



Figure A.10.2. MAP IN ANNEX A MAP of Nuclear Power Plants in France.⁷⁰

⁷⁰ K=1 Project, Center for Nuclear Studies at Columbia University, France: A Study of French Nuclear Policy After Fukushima (<http://k1project.org/explore-policy-france-after-fukushima/france-a-study-of-french-nuclear-policy-after-fukushima>)

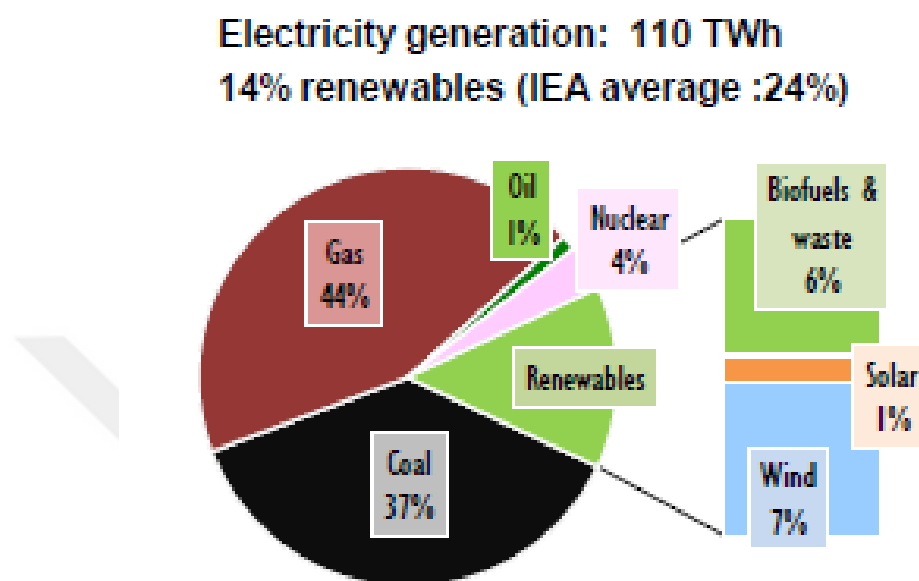
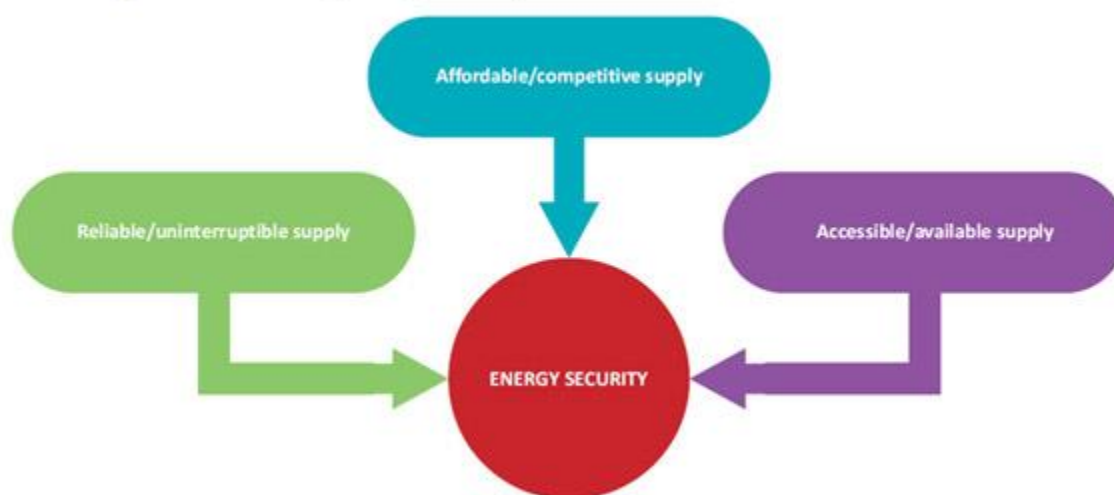


Figure A.10.4. Netherlands energy systems overview (IEA)

Figure 1.1 Defining energy security



Note: unless otherwise indicated, all tables, figures and boxes in this chapter derive from IEA data and analysis.

Figure A.10.5. IEA Defining Energy Security (IEA, n.d.)