Will the Single Horsehair Snap?

Comparison of Europe's Energy Vulnerability After the 1973 Oil Crisis and Today

Master Thesis

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ABSTRACT

Recently renewed political interest in the energy riddle can be witnessed. In addition the number of participants in the global market for energy has grown. It is interesting to state that the debate on the importance of energy resources is not new and in fact originated from the First Oil Crisis in 1973. This study aims at comparing these two debates and concludes what this should mean in terms of a possible future European energy policy.

In order to reach the research objective a theoretical framework was based on three components. First interdependence theory focussed on mutual dependence in international relations and concluded that growing interdependence would increase the chances of conflict but in fact diminish the chances of escalation of these conflicts. Second political economist Klaus Knorr found that economic relations became obstacles in international politics. He envisaged that growing interdependence would thus become the breeding ground for future conflict. Finally a relatively new angle of incidence in security studies named securitisation theory was added to the framework, because recent developments indicate that energy issues are no longer merely an economic issue.

Some limitations have been identified within the scope of this thesis regarding the comparison between the two different debates on energy security. First and most fundamentally the European Economic Community expanded and developed into the current European Union, a threat to clarity which has hopefully been dealt with sufficiently. Second, the Cold War ended, instigating growth in the number of liberal democracies and markets and hence accomplishing the current growth in the demand for energy resources. Finally diversity of supply and in addition diversity of resources have been identified as newly initiated strategies after the First Oil Crisis and their achievements are likely to have influenced to content of the current debate on energy resources.

Following from the analysis the first conclusion is that despite all the efforts Europe will remain structurally dependent on the currently used energy resources. From an interdependence perspective it is likely to expect that a joint solution is somewhere in the future. Whether conflict over energy resources is possible remains debatable, since interdependence comprises more than energy resources and conflicts have multiple causes. Knorr would reason that conflict is already in the air, given for instance recent incidents concerning Russia, Iran and Sudan. This angle is less rosy and argues that Europe lacks common policy and means of defence, in other words that it is rather helpless in case of conflict. Although the United States are mostly fighting the same fights as Europe is, it can be doubted whether this will remain the case. From the viewpoint of securitisation theory it can be argued that given the importance of traditional energy resources and their evanescent nature in the end energy resources could be labelled as existential threat, thus approving of any means necessary to secure them. For the past three decades however there has not been a problem. In addition, there is not much Europe can do.

How then must these scenarios be assessed? For the past three decades all the fuss has not become reality. Europe has devoted itself with reasonable results to the concepts of diversity of supply (own resources, Norway, Russia and Algeria) and diversity of resources (an increase in the usage of natural gas and in particular nuclear and renewable energy). What

stays an obstacle is the realisation of a European Union energy policy, which in fact has been initiated even before the First Oil Crisis. This can have far-reaching consequences given the globalisation of the energy riddle. Hence an energy policy is necessary, but it should not solely deal with matters such as security of supply. Following the analysis the key question should address whether we want to be dependent on energy resources or not. If yes, then we must ask for ourselves how long we want to get exited over Iranian uranium or the entrance of Russian Gazprom on the European energy market. The Chinese are proving that its strategy of what has been labelled ‘weak globalisation’ is bringing grist to its mill. If on the other hand we do not want to be dependent on energy resources in the future, European leaders must search for alternatives even more energetically than they have done during the past three decades and in addition hope that success in this matter will bring them economic advantages alongside with independence.

PREFACE

When receiving my first Masters diploma only eight months ago, this left me with somewhat mixed emotions. Primarily filled with pride and also some sort of relief about finalising a project which in the end proved a bit long-winded, I also knew there was another comparable trajectory coming up.

In retrospect this second trajectory has been extremely valuable. First, it introduced me into an area I was barely familiar with and which proved to be interesting and stimulating, that is energy vulnerability. Second, the fact that this trajectory did not take place abroad (which had my preference) encouraged me to search for domestic internship opportunities. This in turn brought me at the Scientific Council for Government Policy in The Hague, which confirmed to be one of the most inspiring environments I have had the honour participating in so far. Finally, synergy among these positive aspects and personal ambitions, completed with several enthusiastic supportive comments, inspired me to extend my scientific career by exploring options to complete a PhD. All in all, the trajectory developed into a sincere pleasure, which fills me with gratitude and pride.

Some key participants in this trajectory deserve special emphasis. I want to thank prof. dr. De Wilde for all the critical comments and advises and furthermore for establishing contacts with the Scientific Council for Government Policy. Furthermore I would like to thank dr. Arentsen for his valuable comments and documentary during the process. Finally I want to thank prof. dr. Hancher for commenting on the first draft of this thesis and in addition for a wonderful internship at the Scientific Council for Government Policy. While the paper to be published in The Hague might not be the right stage to express personal appreciation, this modest arena certainly is.

I hope you will enjoy reading this thesis and in addition that I will prove able to provide more pleasant reading in the nearby future.

Tim Boersma

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TABLE OF CONTENTS

1. INTRODUCTION

1.1 Background and objective

The current emphasis in world economy could be labelled as 'de-Europeanization'. This roughly implies that the world as we are used to picture it, with Europe in a central position, is becoming outdated (*De Wijk, 2006*). Multiple reasons can be named for this, the most important one probably being the introduction of bipolarity after the Second World War, leaving the United States and Soviet Union to be the final remaining superpowers. From the 1970's on another reason enforcing 'de-Europeanization' has been the stable foreign politics performed by China. Ever since the Chinese economy has been growing steadily, with sharper increases over the past decade. This economic growth, which can be witnessed as well in countries such as India and Brazil, causes global demand for energy resources such as oil and gas to increase. More nations struggling for evanescent energy supplies delivers an interesting spectrum. By now the United States are left to be the final global superpower, with China and possibly India perhaps growing towards somewhat comparable statuses. In terms of energy resources, this situation forced governments to reconsider their strategies to secure energy supplies. In particular dependent nations become increasingly vulnerable.

A logical question would be what the role for the European Union in this spectrum can be and what European leaders are doing to fulfil that role. In fact president Bush of the United States in his latest inaugural speech announced that the United States would seek to minimise its dependence in terms of energy resources by major investments in new technologies for instance (the term 'energy independence' was notably first used by former president Nixon in 1973). How this should be realised however demands more clarification (*De Jong & Slingerland, 2006; Slingerland & Van Geuns, 2006*).

Comparable to the United States the European Union is highly dependent on energy resources from third countries, such as Middle-Eastern countries, Russia, Algeria and Norway. This dependence is likely to grow from the temporarily 50% to 70% in the next decades (*Van der Linde, 2006*). It validates the vulnerability of the European Union in terms of energy resources and combined with the growing number of energy consuming economies and the evanescent energy supplies this creates a dubious future perspective for the European Union. This has resulted in a discussion on so-called 'security of supply' on a national level but in addition talks on a European energy policy have been reinitiated as well, albeit conservative.

Interestingly enough this debate on security of supply is not new. In response to the Oil Crisis of 1973 a comparable discussion took place, in which experts used the same terminology. While the intermingling of concepts should be avoided if only for the sake of clarity and because security of supply in the 1970's simply meant the availability of sufficient supplies at affordable prices (*Yerkin, 2006*) the debate evolving from the First Oil Crisis in this study has been labelled 'economic security'. The fact that not much appears to have changed despite the debate which took place over thirty years ago, however justifies the question whether the presumed problem facing the European Union has in fact developed into a true sword of Damocles or whether this predicament is exaggerated as it apparently was back then.

The previous brings us to the following research objective:

> *The objective of this research is to compare the current debate on security of supply with that of economic security as it developed during the aftermath of the 1973 Oil Crisis and investigate what this implies for the future European Union energy policy.*

The objective of this research can be categorised as a historical comparison between two debates. As mentioned earlier the debate on security of supply is not new. It is interesting to witness that this discussion took place in the 1970's and in fact not much seems to have changed. In order to prevent this study from becoming an abstract document on typologies and concepts it is assessed whether the historical comparison is in fact plausible by outlining the position of the European Economic Community as it was then and the European Union as it is today. To conclude the historical comparison will be finalised and adjacent to it the future position of the European Union in this debate will be discussed.

Considering the above statements, the following problem formulation has been phrased for this research assignment:

> *What is the current position of the European Union in the global debate on energy resources and security of supply, to what extent is the current debate comparable with the debate on economic security as it took place in Europe in the 1970's and what should be derived from this?*

This problem formulation can be divided into three core elements. In the third chapter one can find an elaboration on the economic security debate and the debate on security of supply. Furthermore this chapter contains a description of the current position of the European Union in the global debate on energy resources.

The third core element from the problem formulation is dealt with in the concluding sections of this thesis, which are found in chapter 4. These concluding remarks should provide an answer to the raised issue what should be derived from the analysis carried out in chapter 3 and should thus provide insight about the comparison of the both energy debates and the implications of this comparison for the future of one European Union energy policy.

1.2 Research questions

In order to define a funded answer to the problem formulation, the first issue to be solved is to collect theories which will contribute to reaching the objective of this assignment. These theories subsequently will be used to clarify the arguments funding the two different debates on energy. As mentioned before this study partly aims at comparing the current debate on energy and security of supply with the economic security debate of the 1970's. To characterise both debates three theories will be discussed separately. First interdependence theory and later on international political economy developed from the economic security debate which originated from 1973 onwards. This crisis clarified that world politics is not

solely state centric, as was one of the leading paradigms at that time. Some theorists acknowledged the mounting influence of NGO's and IGO's and cooperative associations of countries and figured their influence could no longer be ignored while studying international politics. The measures taken by OPEC and their consequences (these will be elaborated later in this thesis) confirmed the suggested interdependence among nations and the imperfection of state centrism in studying world politics. One of most important scientific contributions from this period is undeniably *Power and Interdependence* (*Keohane & Nye, 1977*). Without doubt using only this document to characterise interdependence theory would do harm to the concept, meaning other authors made significant contributions as well. Some of these are described in De Wilde's *Saved from Oblivion* (*1991*) which is therefore used as well in the section on interdependence theory. On the other hand it is arguable that Keohane & Nye delivered a thorough description of this theoretical stream and therefore interdependence theory is covered properly in this thesis by using their contribution.

Other theorists witnessed the interdependence as well, but emphasised the role of economy in crucial global events and furthermore claimed that interdependence could hardly be mutual but instead was likely to cause asymmetry, thereby disturbing existing balances. The 1973 Oil Crisis provided these theorists with valid arguments about the importance of economy in crucial world events. After all, an economic gathering of nations in the form of OPEC had recently caused global upheaval. This theoretical stream has been labelled International Political Economy (IPE) and has endured radical intradisciplinary changes since. Therefore, again it will be impossible to characterise this stream in full. Hence one of the first works following the First Oil Crisis – *The Power of Nations* (*1975*) by Klaus Knorr – will (although arguably incomplete) be referred to as IPE within the scope of this thesis.

While these suggestions can be projected on today's energy debate as well, both theories are added to the framework. As mentioned in the introduction, energy debates – in particular today – include more than just a discussion on an economic commodity. Since energy resources have recently again been used as political means of pressure and therefore could be considered as safety issues rather than solely economic ones, securitisation theory is added to the theoretical framework. While traditional security theorists mainly focus on military issues, securitisation theory as formulated by Buzan, Waever & De Wilde (*1998*) is used since it concentrates on issues such as economics and environment as well. This framework will be examined more thoroughly in the next chapter of this thesis. Due to the previous considerations the first research questions are:

1. *Which debates form the theoretical framework of this research and why?*
   1.1 What are the characteristics of interdependence theory?
   1.2 What are the characteristics of international political economy?
   1.3 What are the characteristics of securitisation theory?

2. *How can the debate on energy and economic security during the 1970's be typified?*

3. *How can the current debate on energy and security of supply be typified?*

When a comparison is to be made between two historical timeframes there needs to be solid foundation for this comparison. It is expected that differences can be designated, however these differences are not expected to be of such dimension that comparing both insights is not justified. In order to provide a nuanced elaboration about the advantages and possible disadvantages of comparing the selected timeframes, this issue will be dealt with extensively in the concluding remarks of the section on the different debates.

The next step to reach the objective of this research is to characterise the global energy market as it existed during the debate on economic security and the market as it exists nowadays. It is important to characterise the energy market and its development on global level. Therefore the next research questions are:

4. *What were the characteristics of the energy market during the time of the debate on economic security?*

5. *What are the characteristics of the current energy market?*

Ultimately the comparison of both theoretical debates and the (re)constructed characterisations of the energy market should provide clear indications how vulnerable the European Union in fact is in this sector. In addition it is debated how this vulnerability in both debates has been dealt with in both national and supranational initiatives on market regulation. In other words, how has vulnerability been considered in energy policy initiatives. Hence the final research question is:

6. *Based on the theoretical comparison and the (re)constructed characterisation of the energy market, what can be concluded from the comparison between the debates on economic security and security of supply and what are the implications for future European Union energy policy?*

The second until the fifth research question will be discussed in the third chapter of this thesis, while the final research question is addressed in chapter four. Basically the second chapter provides the scientific toolbox used to characterise and later on explain the different debates on energy from different theoretical angles, while the third chapter addresses the different research questions building up towards the completion of the objective of this assignment in the fourth chapter.

1.3 Research approach

In order to obtain an answer to the first research questions the main authors from that debate should be studied. As was argued earlier, three influential authors in the field of interdependence theory and international political economy are Robert Keohane, Joseph Nye and Klaus Knorr. To characterise securitisation theory the framework of Buzan, Waever and

De Wilde will be used. Both the economic security debate and the security of supply debate will be typified based on their theoretical contributions replenished with relevant literature.

Additional to the different energy debates the energy market during the time of the Oil Crisis of 1973 and the current energy market will be characterised. The information necessary will be gathered through literature and the database of the BP Statistical Review of World Energy. The latter will be used to collect data to describe the current position of the European Union in the global debate on energy resources and the position of Europe in this debate during the early 1970's. This database contains information concerning available resources and dependence on other nations or regions. This information is expressed in terms of the most important energy resources, such as oil, natural gas, coal, nuclear energy and renewable energy. This statistical review is generally acknowledged to be complete, up to date and reliable, given its frequent use in scientific contributions and research.

Altogether both comparisons should lead to an answer of the final research question and the overall objective of this research, which is to provide insight on the debates on economic security and security of supply in the European Union, whether the findings are problematic and how these could be dealt with.

The research approach is presented schematically in figure 1. on the next page, indicating the structure of the report. The structure makes clear that several steps need to be taken to reach the goals of the research. The cursive *RQ* in the structure indicates the research question concerned. The stripes marking two boxes on the right and the left of the structure indicate the two different timeframes in this study, while the arrows emphasise the importance of the mutual comparison in order to reach the research objective. The straight arrow at the bottom indicates that the gathered information together with the mutual comparison should lead to a funded answer of the final research question. At the same time this will implicate the establishment of the research objective.

The next chapter of this thesis will consider the theoretical foundations of the debates on economic security and security of supply. Together the selected theories will form a 'scientific toolbox' that contains elements of all theoretical insights which can help answer the formulated research questions. As argued the third chapter will mainly address the analysis of the different debates and the position of Europe concerning energy resources, while the fourth chapter is reserved to formulate conclusions.

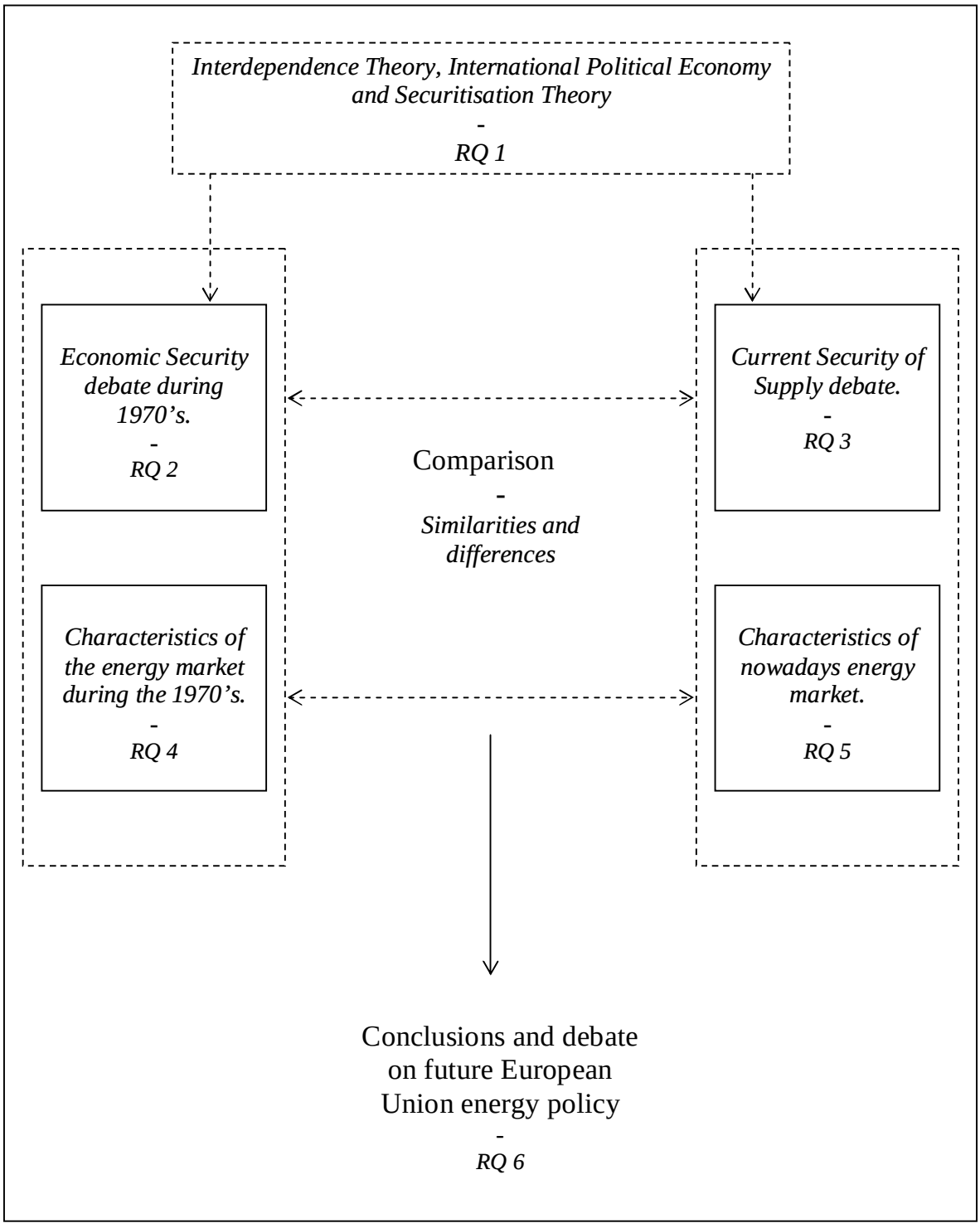

Figure 1. Structure of the report.

2. THEORETICAL FRAMEWORK

2.1 Introduction

As was clarified in the previous chapter, this study aims at comparing two energy debates that occurred in different timeframes. The first has been labelled the economic security debate while the second is currently typified as the security of supply debate. In order to comprehend the substance of these different discussions, it is necessary not only to mention characteristics of the debates by quoting leading authors, but moreover to consider their theoretical foundations. The latter is done in this chapter. In the next sections a methodical description is set up to typify successively interdependence theory, international political economy and securitisation theory.

2.2 Interdependence theory

Whether interdependence theory developed only after or far before the Second World War is debatable, but not relevant for this thesis. Reality is that after this war it became increasingly difficult to explain world politics solely using state-centric theories. On the one hand there was the rapid increase of the number of IGO's and NGO's – which developed varying but remarkable political power – and secondly some key developments could simply not be explained by state-centric theories such as realism. Among these are the withdrawal of the United States from Vietnam (the premise that military intervention would be the final and decisive state activity against an opponent proved wrong), the breakdown of Bretton Woods monetary system (right after the Second World War a stateless currency was rejected by the United States since their dollar was doing magnificent, but with the recovery of Western Europe and Japan in the 1960's this leading position was lost) and the Oil Crisis (an economic cartel instead of a nation proved able to influence world politics drastically without military intervention). A remarkable case is delivered by the Cold War, by realists probably witnessed as a clash between the remaining world powers (United States and Soviet Union), but perhaps also marking an ideological clash between liberal democratic and communist values, transcending nation states as such. Should these examples however be seen as incidents or did they point towards a structural deficit in theoretical approaches of that time? To some theorists interdependence theory provided answers.

In political science, 'interdependence' in general refers to independent social actors who are structurally affected by one another's behaviour (*De Wilde, 1991*). This structural involvement, labelled structural interdependence, can be typified at different levels of abstraction. First integrative interdependence is the intertwinement of activities of actors or even integration of actors. Withdrawal from the relationship by one actor will have clear effects on other actors involved. Second, functionalist interdependence emphasises a human-made superstructure or some sort of institutionalised and judicially powerful form of governance that transcends the involved actors. This type of interdependence seems to be growing considering regional cooperation in different parts of the world, mostly built on economic grounds but soon with increasing political power, such as the European Union and ASEAN. Finally systemic interdependence refers to a system, to which actors inevitably belong, whether they like it or not. The latter form of structural interdependence has – because of growing interdependence – developed into world society and thus comprises the globe.

This means actors can affect each other on a global scale. Within this context the other types of interdependence can be situated, together with other behavioural options.

What should be questioned first about the outlines of interdependence is how independent the referred social actors in reality are. When looking at a European context, one can witness multiple examples of independent behaviour, such as the British unconditional support of the United States in their war on terrorism or the Danish rejection of the Euro. On the other hand one can witness less independent behaviour of states wanting to join the European Union such as Romania and Bulgaria. These nations are pretty much told what to do in terms of reforms and policy initiatives. Or hypothetically, say all major European member states would fiercely oppose the United States invasion into Iraq, would the Belgian government get away with unconditional support comparable to the current British? It might be more likely that the Swedes or the Dutch would. This suggests that economic power within structural interdependent systems could be decisive when determining the true independence of the social actors involved, or at least, that there could be a relation between the extent of independent behaviour in an interdependent context and economic power.

Secondly the European Union probably demonstrates that integrative and functionalist interdependence as formulated are no longer separate concepts. It is arguable that the European cooperation started as a functionalist concept, when the foundation of European institutions formed a superstructure with judicial powers. With the transfer of competences from member states governments to supranational politics however the European Union has become more and more integrative, meaning that the withdrawal of member states will increasingly have consequences for other states involved. Again, it is likely to expect that the economic strength of this particular withdrawing state is important for the impact it would have on the other participating nations.

Systemic interdependence in its most simple definition means mutual dependence. In world politics it is about shared effects among countries or among actors within countries. It is important to note that there should be reciprocal costly effects of transactions, otherwise it would simply be interconnectedness (*Keohane & Nye, 1977*). The mutual dependence between countries or actors can be situated between symmetrical or pure dependence, but is usually somewhere in between.

The Oil Crisis has been one of the catalysts of the development of the theoretical insights of interdependence. Until then military power was perceived as being the only relevant form of power. The concept of power can be thought of as the ability of an actor to get others to do something they otherwise would not do – and at an acceptable cost to the actor (*Keohane & Nye, 1977*). The mentioned authors claim that to understand the concept of power within interdependence the dimensions sensitivity and vulnerability must be analysed. The first dimension assumes that the framework of policies remains unchanged. It questions how fast a country can respond to changes and how large the costly effects are. The sensitivity of Japan during the Oil Crisis in 1973 proved to be larger than the sensitivity of the United States, since the latter imported a smaller share of its petroleum. The vulnerability dimension of interdependence rests on the relative availability and costliness of alternatives. This implies that policy changes can occur, and indicates in other words how countries or actors can respond to sensitive interdependence and what the costs of these actions are (*Keohane & Nye, 1977*). To stick to the example of the United States and Japan, the previous, although importing less petroleum, still proved vulnerable. The response of both nations to the Oil

Crisis however differed elementary. The United States anxiously tried to shape its policies and behaviour in order to decrease its vulnerability. Among the initiatives are an increased focus on diversity of supply – importing more petroleum from for instance Venezuela and Nigeria – and usage of different energy resources, such as nuclear energy. A comparable movement has been witnessed in the European Union, however with stronger focus on gas usage and oil from other regions, the latter action showing that OPEC could not maintain its prices and the scenario of exhaustion was not realistic at that time (*Correljé, 1998*). Japan on the contrary simply seemed to accept its sensitivity concerning energy resources. Its government guaranteed energy supplies simply by being less demanding concerning countries which deliver these supplies. It should be mentioned however that given the lack of natural resources of Japan its government does not possess another option than its current approach. The same can today be witnessed in China, causing instability in the UN Security Council by vetoing sanctions against Sudan, simply because it is too dependent on oil from that nation. Without adopting policies to decrease their sensitivity in other words, these nations still hold significant power in world politics, being an economic world power and an awakening giant. This once more proves the economic dimension of power in the concept of interdependence and the cases of Japan and China demonstrate that opposing sensitivity and thus decreasing vulnerability is not necessary to remain or become prominent on a global level.

In order to qualify occurrences of interdependence De Wilde (*1991*) distinguishes between confrontational and constructional interdependence. Qualification is necessary because not all interdependence has the same essence in terms of consequences. Furthermore actors can be interdependent in different ways at different levels (*De Wilde, 1991*). Confrontational interdependence refers to 'mutual subjection', meaning that neither social actor can reach its goals because of the other social actor. Constructional interdependence is typified as the consequence of mutually perceived necessity of cooperation. Although the road has proved bumpy, regional initiatives such as the European Union are examples of this. Arguably interdependence in both forms is no panacea for conflict: frequently distributional problems occur, resulting in asymmetrical interdependence. This is observed repeatedly in the UN Security Council with the described scenario concerning Sudanese oil and also the American veto concerning Israeli intervention in Lebanon recently. In general however, some – mostly pluralist – theorists assume that an increase in interdependence results in increasing political cooperation and therefore is likely to prevent conflict from escalating. In their view interdependence would create more political cooperation and enhance trade, making conflict rather useless since it would disrupt commercial relations (*Pevehouse, 2004*). More realistic theorists however will claim exactly the opposite, for instance that higher levels of trade between nations (trade interdependence) lead to more occasions in which conflict can in fact escalate and result in for instance military clash. This view seems more in line with theoretical contributions of some political economists, which will be elucidated in the next section. To sum up, the third dimension concerns the (a)symmetry of the mutual involvement in terms of costs and benefits. In other words, it describes the position of actors in the structure.

In short, interdependence seemed a logical answer to the growing complexity of international politics. No longer was this the exclusive stage for states, as NGO's and IGO's entered the arena and gained remarkable influence. Because of this growing complexity it became more difficult to act without interfering other nations or organisations. This sometimes lead to the assumption that slumbering conflict would be bound to escalate less frequently where the world would become more interdependent, since it would enhance political cooperation and interstate trade. There are however multiple examples proving that in particular military and

economic power provide positions in which nations do not necessarily have to consider this interfering when it really comes down to it. In general nations do try to consider positions of other nations, in particular those important to the concerning country. This can lead to deadlocks when actors are hindered to reach their goals or it can enhance cooperation and result in the establishment of mutual goals. The concept of mutual dependence implies reciprocal costs of actions. Nations can either be assessed on their sensitivity – indicating the costs of response to changes within given policy frameworks – and vulnerability – meaning the availability and costs of alternatives when changes occur. As argued these two concepts have not proved to be decisive for the development of nations in a global perspective. Different ways of dealing with them both proved rather successful, as illustrated amongst others by the United States and Japan. Still these concepts provide an interesting tool to characterise the European Union in terms of energy supplies and usage.

2.3 International Political Economy

International Political Economy (IPE) is about the interplay of economics and politics in world affairs. Scientists from this discipline search for answers to the question: "What drives and explains events in the world economy?" (*Ngaire Woods in Baylis & Smith (Eds.), 2001, p. 278*). Two reasons are said to have accelerated the development of IPE as an international relations discipline. First, the Oil Crisis in 1973 – after combined efforts of the Organisation of the Petroleum Exporting Countries (OPEC) – and the following sharp increase in price brought new economic challenges. Second an initiative of developing countries called the New International Economic Order (NIEO) aimed at altering the rules of the game by seeking better representation in international economic institutions did not succeed, however, it did highlight theories emphasising world economy.

Klaus Knorr published his most important work shortly after the First Oil Crisis. His contributions among others concern the possible negative consequences of interdependence and actually appointed these developments as breeding ground for future conflict. Although the latter remains debatable, his work is used to represent IPE in this thesis. In his work *The Power of Nations* (*1975*) Knorr first explains the different kinds of economic power that countries can possess. Countries possess active economic power, which is defined as the ability of a country to hurt another country. In addition there is passive economic power, which is the ability of a country to limit the use of active power by another country. The exercise of economic power fits the debate on energy resources for several reasons. First, leading exporting countries form an oligopoly with an increasing amount of power. Second most of these countries are not highly dependent on imports simply because most regimes do not care that much about their citizens. Finally one could conclude that the active power of these nations increases while scarcity of energy resources does the same. It has to be added that most dependent nations have not successfully developed passive economic power to counterweight the active power of energy exporting nations. As observed in the interdependence debate they either tried diversifying their resource channels and adapting the usage of different resources or – rather blunt but still – they admitted their dependence and moved on, with success. It must then be questioned what passive power can be useful in order to counterweight economic commodities that are of continually growing importance.

Knorr's debate mainly concerns the interlocking between economic and military power. He states that the 1973 Oil Crisis showed that the latter is more important than economic power.

All countries that were too dependent on oil had to restrain oneself. In order to compensate this embarrassing situation military power seemed to be the only solution. One can argue that being less demanding of exporting nations is another option. Knorr's conclusion is notable since it appears that military power and support for it (Yom Kippur War) were rebound not by using military force, but instead by economic measures, namely an oil embargo. What is interesting about the energy resources that fund this particular economic power is that nations cannot obtain this power by effort, but instead simply possess it or not. This causes Knorr to typify the nations that possess energy resources as 'born monopolies' (*1975*). Unfortunately for most dependent countries these born monopolies are mainly situated in instable regions of the world.

The uneven distribution of knowledge and materials among nations causes interdependence according to Knorr. Within nations people profit from developing communication and transportation means. In addition more international trade is occurring globally. This has given birth to a stateless extra-national phenomenon dominated by political elites but also multinationals. Since nations find it difficult to cope with these developments growing global interdependence is both enriching and impoverishing (*Knorr, 1975*). This phenomenon is the breeding ground for new conflicts, since growing interdependence accentuates one country's dependence on another. What can be criticised about this argument is that it still is state centric: countries are depending on one another, globalisation accentuates this dependence and thus causes new conflicts. Cooperative interdependence as was discussed in the previous section however appears to be a controlling force in this matter. More generally, there are few countries that can get away with restoring the uneven distribution of knowledge and materials as mentioned by Knorr. Furthermore, it is globalisation itself that contributed to the development of nations such as China and India. In terms of new conflicts it seems plausible that interdependence increases chances of conflict, but diminished them to actually escalate. An increasing scarcity of energy resources however could jeopardise this statement.

In general international interdependence causes asymmetries among states which is usually unfavourable for weaker states: even when powerful states do not exploit these asymmetries, the mere threat of this disturbs weaker nations. This has been labelled neo-colonialism or a modern variant of imperialism. Knorr defines neo-colonialism as the usage of power by certain states to bring about unequal relations with other states in such a way that continuous advantages originate for the previous. Although military power in this theory is not essential, it does contribute to reinforcement of required actions if necessary. It is however no longer unavoidable, as is the case with imperialism. Neo-colonialism causes informal empires to come into being, which are formed by powerful states that extract unequal gains. However the assertion that the international economic system is solely developed to the profit of powerful nations and that weaker states cannot participate in this system – as for example has been claimed by 'dependencia' theorists – is invalidated. Weaker countries are not puppets and in the international system many developments are taking place, partly under influence of economic nationalism and an increasing insistence on local autonomy (*Knorr, 1975*). Worrisome however is the fact that interdependence is sometimes inhibiting these developments and moreover that an increase in autonomy for weaker states holds no guarantee that poverty will diminish. The argument that interdependence causes asymmetries to the disadvantage of weaker states should be rejected by now. It is observable that many nations profited from interdependence, in terms of for instance knowledge distribution and labour migration. The case of energy resources is becoming increasingly interesting, since it provides most exporting – and from our perspective unstable – nations with an increasingly

powerful mean to exert power in the international arena or even protect itself from military intervention, as monitored in Sudan. Are these indications that economic power can overwhelm military power? It at least seems to support the findings in earlier research that while increasing global trade can be a mechanism of lessening conflict, it can also create hostilities between states that are at least a source of concern, if not potential source of military conflict (*Pevehouse, 2004*).

Some theorists – as argued in the previous section – claimed that the development of interdependence would cause armed conflicts between states to become rare. Knorr is careful with these conclusions, since interdependence also accentuates negative dependence and might therefore encourage conflicts or initiate new ones as well. Today however it appears indeed that growing interdependence did cause a decrease in the number of armed conflicts, namely with 40% since 1992 (although terrorist attacks are not included in this calculation). According to some this should be attributed to the upsurge of international activism, in terms of the United Nations and countless NGO's and IGO's (*Mack, 2005*). Next to this consideration, Knorr mentions the more economic character that some assert to be the foundation for conflicts. There is a crucial difference between wealth and economic power. Some examples of indispensable commodities are energy resources for industrialised countries and food for countries that regularly suffer from famines. It is however essential as well that these commodities are not controlled by one single country. In 1973 oil was used by the Arab world as such an instrument, but this is not likely to happen again (*Knorr, 1975*). Again this conclusion should be questioned, that is, in December 2005 according to some Russia proved otherwise by using its gas supply as a political mean and more recently the Iranian government threatened to use its oil resources for that same purpose.

In short, Knorr's theory had tangents with interdependence theory in that growing complexity of world politics is recognised. An economic viewpoint was added to this debate, which was no longer merely about states but involved an extra-national phenomenon controlled by bureaucratic elites and multinationals. Knorr emphasised the possible negative economic consequences of interdependence – asymmetrical distribution of resources and power – and saw this as breeding ground for future conflict, since dependences would become more accentuated and indispensable commodities would enhance this process. Recent research supported elements of this assumption, while the opposite can be true as well. Furthermore friction can be caused by growing economic nationalism and more emphasis on local economies, in particular in weaker countries. The economic viewpoint in this debate must be marked as valuable. Indeed, economic commodities such as energy resources have proved to be of increasing importance. The negative consequences of interdependence as a potential source for escalation of increasing chances of conflict have not been proved so far, although some will for instance argue that the United States invaded Iraq mainly because of its energy resources and will see this as proof of there belief. On the other hand, human security studies show that during the last two decades the number of armed conflicts was strongly reduced, which is ascribed to the efforts of countless international organisations.

2.4 Securitisation theory

Threats and vulnerabilities arise in many different areas both military and non-military but this does not make them security issues. Current theoretical contributions have not sufficiently

contributed to defining criteria that distinguish these threats and vulnerabilities from the normal political issues (*Buzan, Waever & De Wilde, 1998*).

The mentioned authors in their book *Security – A New Framework for Analysis* (*1998*) plead for a more nuanced definition of security. According to them this is about survival and surviving an existential threat to a designated referent object. Implicitly this justifies the use of whatever means necessary to block the threatening objective. Traditionally the referent object in this debate is the state, but others such as international organisations can be considered referent objects as well.

As soon as threats are realised adequate measures need to be 'sold' to the public. In general politicising – which in this case means making an issue part of public policy – would be sufficient, but since threats of this proportion require extreme measures, politicisation needs to be taken to another level: securitisation. In this context this means taking politics beyond the established rules of the game and framing the issue either as a special kind of politics or as above politics (*Buzan, Waever & De Wilde, 1998*). This action is labelled a securitisation move, whereas securitisation takes place once the public has accepted the existential threat and the proposed counter-measures. Ironically this squeals something contradictory about the relation between politicisation and securitisation as well: the first implicates making an issue an open matter of choice, while the latter is rather presented as not suiting the regular political channels since immediate action is required. This distinction however can be questioned. Does politicisation not often happen at an elite-level as well? Would it not be more appropriate to say that securitisation takes place at the elitist governmental level and that the public as such does not really have a voice? An obvious example are the decisions taken about the war on terrorism in the United States, which merely seems to involve Congress and national government. This conclusion would make the distinction between politicisation and securitisation rather vague, reducing the latter concept to an elitist carte-blanche for national government instead of a more demarcated acceptance of measures.

According to the authors three units of security analysis should be focussed on: referent objects (existentially threatened), securitising actors (declaring the existential threat) and functional actors (affecting the dynamics of sectors). The concept of securitisation is presented schematically below in figure 2.

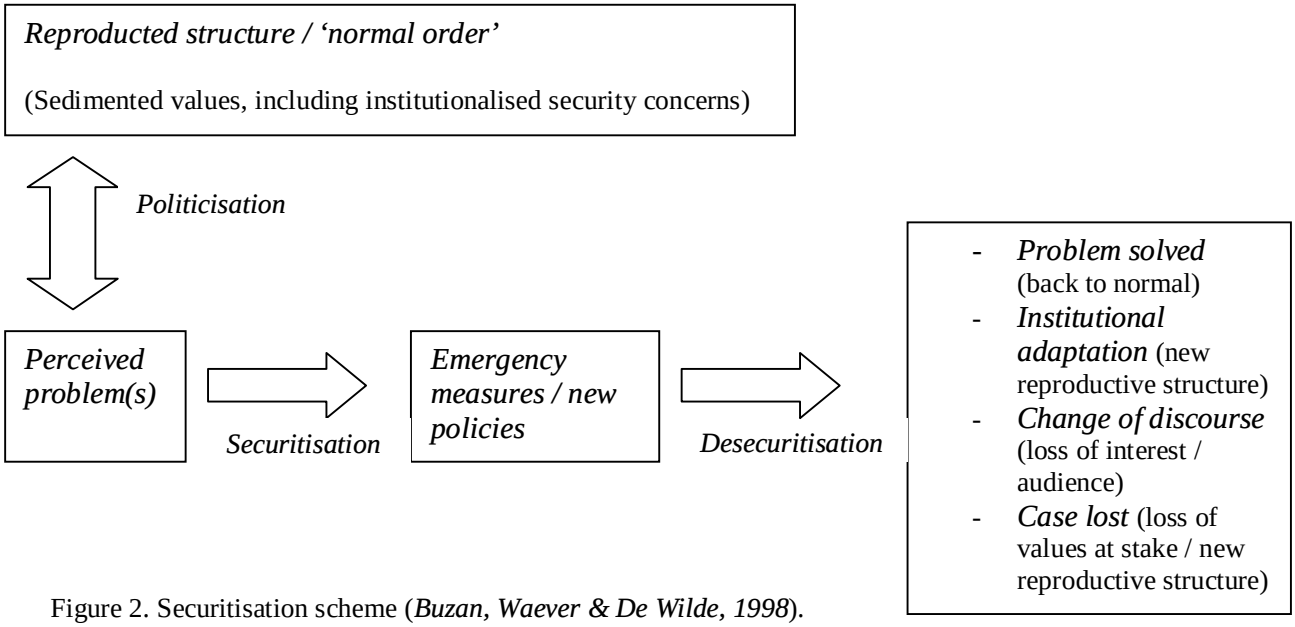

Figure 2. Securitisation scheme (*Buzan, Waever & De Wilde, 1998*).

Traditionally securitisation theory focused mainly on military issues. In this proposed framework for analysis the authors plead for examining multiple sectors separately. Other relevant sectors include economics, politics, environment and society. These sectors have different values in terms of security in different situations. Simply put, this theory is used to counter excessively narrow conceptions (*Buzan, Waever & De Wilde, 1998*). In addition, during the analysis cross-sectoral securitisation has been proved. To give an example, if Turkey changes regulations in the economic field in relation to Syria, this would be perceived as a security affair, since Turkey controls the essential water tap and since their mutual relation is tense because of the Kurdish issue. When Poland would change the same regulations with respect to Check Republic, this would probably be framed as an economic issue (*Buzan, Waever & De Wilde, 1998*). While traditional security studies used the military and political sectors, this framework guarantees a more divers and thorough analysis of security complexes. It seems correct to involve more sectors when analysing security issues. Perhaps traditional security studies still utilise a state-centric ideology in their analysis, resulting in focus on military and political issues. Evidently sectors such economics and perhaps to lesser extent environment must be considered as well. On the other hand, as the example used by the authors demonstrates, once securitisation takes place it is likely this is solved by exerting political pressure or use military power. Economic sanctions would be another common approach, perhaps as part or extension of political pressure. Thus while other sectors are involved in the analysis, it must be expected that once a referent object is threatened, solving this issue in many cases will require traditional solutions.

In short, there are important differences between threats and security issues. Essentially the survival of an existential threat to a referent object must be on the line. If this is the case, countermeasures need to be pushed. Instead of making this issue public (politicisation) it is pushed that any measure is justified, which is named securitisation. This concept has been questioned since politicisation is expected to take place at the same elitist level as securitisation. The main difference is that instead of clearly demarcating policies when regular subjects are dealt with, perceived security issues can move this same governmental elite to

provide a carte-blanche to executing governmental institutions to solve the security issue. Once these measures have been carried out, desecuritisation takes place, for instance when the problem is solved or institutions have been adapted. The scheme does not make clear whether desecuritisation also means returning to the 'normal order' or whether a securitising move rings in a new era. The current situation in the United States (growing resistance against government policies to fight terrorism) might indicate that the framework can be extended with some notion of preservability; in other words, securitisation moves perhaps need to be carried out fast in order to preserve credibility among citizens. The framework analyses multiple sectors such as economics, politics, environment and society separately. The importance of focussing on multiple sectors besides the traditional ones is acknowledged, however, it is expected that once an existential threat has been recognised, usually traditional measures are required to solve the matter.

2.5 Conclusions – the scientific toolbox

After expounding these theories it is useful to indicate how they will be used to find answers to the research questions. Therefore the essential elements from all perspectives will briefly be repeated in order to provide an overview what the function of these insights will be in this analysis.

Both interdependence theory and the work of Klaus Knorr (IPE) provide useful insights for this analysis. The previous offered the distinction between sensitivity and vulnerability and although it was argued that these concepts have not proved to be decisive for nations' development (different ways of dealing with these concepts both proved successful), they will be used to assess the position of the European Economic Community of the 1970's and the current European Union in the energy debate. Furthermore in contrast to IPE interdependence theory argued that increasing interdependence among nations would decrease conflicts, or at least prevent them from escalating. Klaus Knorr argued the opposite and warned that increasing interdependence would enhance conflict between nations. This debate will be projected on the European case as well, although the enhancement of conflict as argued by Knorr has been questioned referring to evidence provided by human security studies.

Another interesting feature provided by Klaus Knorr is the mentioning of 'born monopolies'. This refers to the fact that nations either possess energy resources or they do not. Sadly for most developed nations these resources are mainly located in instable parts of the world. This partly validates the territorial fixation which sounds in Knorr's work, although currently the interests and participation of major energy multinationals should be considered as well.

What is attractive from securitisation theory is the identification of existential threats. These make way for securitising moves, implying that any countermeasure can be permitted. These features will be assessed for both energy debates. It was argued that regular politicisation took place at the same level as securitisation. In addition it was suggested that current events in the United States indicate that securitising moves' credibility have some sort of preservability.

3. ENERGY

3.1 Introduction

While the previous chapter was mainly concerned with the theoretical foundations of this study, this chapter is devoted to the actual analysis of the different debates and energy characteristics in respect to this theoretical framework. First the economic security debate is discussed using interdependence theory, Knorr's theory and securitisation theory as 'scientific glasses'. Secondly the same is done for the current debate on energy, which has been labelled security of supply. In the final three sections energy characteristics are described and in addition the proceedings on the development of the single European Union energy market. This chapter is completed by an overview of global trends in the energy market.

The used denomination of these debates as economic security and security of supply has proved to be debatable. Multiple publications used in this chapter will demonstrate an intermingling of these terms, in particular the use of security of supply in publications from the 'economic security era' appears regularly. As clarified in the introduction the concepts have been introduced to mark the different timeframes. In the concluding sections of this thesis this intermingling will be discussed in more detail.

3.2 Economic Security debate

The transitoriness of energy resources was not discovered yesterday. In the late 1960's a study called Resources and Man received much attention (*1969*), which emphasised the supposed exhaustion of energy resources. In 1971 the commotion was instigated when the Club of Rome projected that an exponential growth of world population and industrial activities would make the world system collapse. Although some European governments initiated energy policy proposals aiming for new techniques and more economical use of energy resources, these proposals did not get time to flourish instantly since in 1973 the Yom-Kippur War between Israel and Arab states led to the First Oil Crisis. The OPEC countries raised tariffs for oil and countries supporting Israel were banned entirely. Energy recourses were used by the OPEC to put pressure on western countries to rethink their Middle East policy. According to some the initiative of the OPEC was completely understandable since western nations had been short-sighted and built their economies on cheap oil, forgetting that reserves are finite and depletable. Furthermore, the supposed moral obligation to cater the western growing energy needs fell apart since many western nations actively supported the arch enemy of the Arab nations (*Pachachi, 1973*).

Arguably one rather positive consequence of the First Oil Crisis was the enlarged attention for energy policy in European countries. Unlike the United States – which was dependent on Middle East oil to a less extent since it could drill new oil fields in Alaska and of the coast of Louisiana – European nations realised at that time their economies were highly dependent and that this made them vulnerable. This had two-fold implications: first national governments each started developing medium-term energy policies aiming at reducing dependence from for instance the OPEC countries in the future. Second a debate originated on future European cooperation in this matter.

Medium-term policies varied across nations. Drillings for new oil fields of the coasts of Norway and Scotland were intensified, in search for alternatives to OPEC oil. At that time the only logical substitute for oil was nuclear energy. Soon however an anti-nuclear energy lobby developed – for instance in the Netherlands, which warned for nuclear waste and the rather experimental nature of the intended nuclear plant in Kalkar (*Verbong (Ed.) 2000*). It is appealing that the debate on nuclear energy was mainly based on acceptability and safety (for example causing problems of nuclear waste for future generations) since studies carried out in the early 70's as a response to the dependence on Middle Eastern oil suggested that every dollar invested in producing facilities for indigenous oil and gas was expected to be almost 2½ times more productive than every dollar invested in nuclear activities. In addition, with regard to energy transport and use, it was expected that costs for resources required to get energy to the customer would be lower in the case of indigenous oil and gas (*Odell, 1976*). In other words, the economic foundation to focus on nuclear energy was dubious.

National governments also tried to encourage their people to reduce the use of oil. In Germany for instance this led to multiple car free days, since they were banned from the highways on several Sundays. Governments also supported energy saving investments such as insulating houses, installing double-pane windows and installing catalysts in cars. This was encouraged by making these initiatives tax deductible. These measures were rather successful since per capita energy consumption decreased reasonably and is still much lower than the United States. In addition the European nations continued to tax the use of gasoline, which was exported mainly by the United Kingdom and the Netherlands. Since the prices of oil and gas are usually linked, it is not surprising that some national governments profited from the rising tariffs. To give an example, this seems in line with the Dutch policy regarding their gas reserves as it was formulated in 1962: "…in other words, our natural gas should be used for those purposes, generating the highest possible net profits in national economic terms…" (*De Pous, 1962*). Definitions like these underline the economic orientation in the debate at that time. This has been underlined by the qualification of the Netherlands having adopted a public property model – in other words national policy focussing on the production and export of gas in order to maximise welfare and prosperity – albeit combined with the development of a nation-wide domestic gas consumption market (*Arentsen & Künneke, 2002*). Interestingly, the renewed attention for energy policy in national governments after the Oil Crisis seems in some cases to have led to more integrated approaches towards the energy sector. Whereas energy was first mainly perceived as an economic commodity, the Oil Crisis made clear that energy resources could be used as political means. In response to the nuclear energy debate, environmental concerns gave the debate another dimension. In the Netherlands, the 'Energienota' (*1974*) clearly tried to entwine energy policy with other policy areas, for instance by mentioning ecological requirements, security and employment issues.

The aftermath of the First Oil Crisis caused the debate on some sort of European Community energy policy to flourish. This debate was initiated in 1968 when the European Commission published the 'First guidelines for a Community energy policy' (*Spaak, 1973*). The document argued that any energy policy had to be based on consumer interests and had to provide a sure, stable and affordable supply. In addition market forces had to play their part and be solely accompanied by governments intervention when necessary.

Further development of a common energy policy was recognised as a difficult process since member states had different interests in this matter, being producers, importers, exporters or a bit of both in the fields of oil, coal or natural gas (*Brondel, 1978*). Furthermore the splitting of

responsibilities between the European Coal and Steel Community, Euratom and the European Economic Community caused complications (*Spaak, 1973*). Since the Oil Crisis made clear how vulnerable the Community was on oil imports, it was suggested to spread the use of different energy resources as well. An important contribution was expected from natural gas – which was found in the Netherlands, Italy, France and the North Sea – however oil's share in energy consumption was expected to be slightly over 50% up until 1985. It must be noted this calculation resulted in 64% estimated use of oil only few years earlier (*Spaak, 1973*). Next to spreading of energy resources, reduction of consumption was seen as an important policy field of the Community as well. It was expected that member states could cut consumption by 15% or more simply by promoting the rational use of resources. In order to 'promote' this policy the European Economic Community adopted directives forbidding the use of oil and gas in power stations and promoting the use of coal (*Brondel, 1978*).

These internal measures however could not solve the problem. It was recognised as well that improving relations with oil exporting countries would be necessary in order to prevent future incidents similar to the Oil Crisis. A so-called North-South dialogue was initiated but no quick follow up was reported. Furthermore it was claimed that imports had to be cut, for example by initiating nuclear programs. These caused much fuzz in some European member states however and their development therefore proved problematic, although they were among others encouraged by the European Commission. One bright spot in the energy puzzles came from across the Atlantic. Since the United States experienced the same troubles in regard to the Oil Crisis and they obviously wanted to prevent this from happening in the future, the U.S. government launched the Carter programme, aiming at less dependence from energy imports in the future. It was marked as a commendable initiative, relieving the world energy demand to some extent, with only one negative side: its emphasis on nuclear energy. It was expected that uranium resources would be limited as well, guaranteeing the same situation as with oil in a fifteen years time period.

The previous considerations were reflected in Commission proposals regarding a mutual energy approach. According to the Commission it was essential to secure energy supplies in a more insecure market. The market had to be monitored and increased dependence on energy imports had to be reflected in external commercial, economic and cooperative policies (*Spaak, 1973*). In addition it was advised to promote technical and scientific research in order to develop new sources of energy and encourage more efficient use of energy resources. The Commission also acknowledged major differences between European Community member states that needed to be overcome. First there was the huge difference in policy approach between for instance conservative Italy and France, where government intervention was normal, and the Netherlands and the United Kingdom, which were rather liberal, partly driven by the powerful lobbies of multinational oil companies. In addition some European Community countries felt extremely exposed while not possessing energy resources and indicated they would develop national initiatives when the European Community would not do so on short notice (*Simonet, 1973*).

To use the theoretical insights described in the previous chapter, interdependence was in a way the scientific response to the First Oil Crisis. The motive of the Oil Crisis, interference of western states in another conflict between states, perfectly fitted the usual realist visions of that time in terms of state centrism. On the other hand interference of other interests also demarcated the growing complexity in the particular timeframe, suiting the interdependence debate. It seems sectors like the field of energy resources illustrated this growing complexity

because of their evanescent nature. What made this issue more susceptible is that energy resources were located mostly in instable parts of the world whereas most consuming nations were depending on these resources.

The reaction the interference of western states in the Yom Kippur War brought about however had not been witnessed before. Several states combined their forces by cooperating in an economic forum and could seriously harm the interfering nations. These nations proved sensitive to the measures of the OPEC, but even after initiating countermeasures such as introducing diversity of supply, different energy resources and promoting thrifty use of resources, they still proved vulnerable. This supported the assumption that increasing international trade increased chances of conflict, since industrialised nations simply depended on oil and were thus vulnerable to shortages – and still are, referring to president Bush's latest inaugural speech.

Problematic however seems to be the perceptiveness of these concepts. The locations of energy resources are volatile realities (rather, 'born monopolies') which in case of high usage naturally bring about dependences as well. To look from the supply perspective, exporting nations needed guaranteed demands and usage of their resources just as much as importing nations needed their supplies. Therefore what was more interesting were the different responses that the statement of vulnerability brought about in different nations. While countries such as Japan simply accepted their dependence on energy resources by being less demanding from nations they imported resources from, the United States and countries of the European Union anxiously tried to reduce their dependence, albeit in different ways. Given their current positions in a global perspective, multiple options have proved productive, however the reinitiated debate on security of supply indicates there might be new reasons for concern, which will be discussed later.

This established vulnerability supports the IPE vision that energy resources are special to the extent that they create 'born monopolies'. One can wonder whether mutual dependence as argued by interdependence theory can ever work when energy resources are concerned. This assumption disengages the concept of asymmetry envisaged by theorists like Knorr. From a global perspective this asymmetry was believed to become the breeding ground for future conflict. In contrast to interdependence theorists Knorr believed increasing interdependence would actually escalate. Among European member states the dependence from a specific group of nations, mainly from the Middle-East, emphasised the unambiguous goal of reassuring that events like the First Oil Crisis would not occur again. Several measures were carried out, which resulted in most reserved cooperation among European member states and a very cautious advance towards energy exporting countries in terms of a North-South dialogue. Given the occurrence of the Second Oil Crisis in 1979 and the modern debate on security of energy supply however one can only conclude that these measures have so far missed their goal. It is however arguable that reducing vulnerability does not link up with reality. As concluded earlier the entire concept of vulnerability and in particular the problematic character this concept is supposed to carry (as supported by the reinitiated debate on security of supply), is rather perceptive. On the other hand, given the fact that the occurrence of economic measures being used as political means by an economic forum was entirely new at that time, the responses of the different nations are completely understandable. It is therefore even more interesting to witness different choices being made all resulting in current prosperity. Finally it is encouraging to ascertain that realities of energy resource dependence did not widely instigate new conflicts, but rather that growing complexity of

global relations made nations and governments more aware of other interests. Whether this statement is durable can debated however.

Looking at this debate from a securitisation perspective the crucial question is whether western states felt they had to survive an existential threat when confronted with the measures of the OPEC. Obviously securitisation theory – being developed somewhat twenty five years later – has no difficulty dealing with an economic forum performing among nations on a global level. It is likely that given the uniqueness of the actions initiated by OPEC in this timeframe, they have only been scaled as threats instead of security issues, or, given the awareness of growing interdependence and different interests, nations were careful to embrace extreme countermeasures in case of a security problem. If this were not the case and dependent nations had picked up any means necessary to reduce the security issue, one might have witnessed another World War. This raises the frightening idea however that with an increasing awareness of the transient character of energy resources and a growing number of energy consumers the future might well prove the right of more realistic assumptions that growing interdependence is the breeding ground for future armed conflict.

3.3 Security of Supply debate

The transitoriness of energy resources was not discovered yesterday. As witnessed in the previous section the 1973 Oil Crisis and its aftermath created debates on both the dependence of European nations of in particular OPEC-countries and furthermore on designing a European energy policy with combined efforts. Lately a broad spectrum of authors has tried to evaluate the scientific contributions from those days. This is obvious since our economic system is still to a large extent based on the energy resources that were used thirty years ago. In addition the debate on dependence of European nations has flourished, among others due to the Russian-Ukrainian dispute over gas in December 2005. Interestingly enough the event itself was not that special: Russia simply decided to account normal commercial tariffs to Ukraine instead of mild tariffs that it was used to – likely because Moscow did not favour the Orange Revolution that took place and made Ukraine more western oriented. Obviously Ukraine tried opposing and Russia closed the pipeline to emphasise it meant business (*Van den Heuvel, 2006*). Although not remarkable in itself this event did painfully make clear how dependent European nations are on Russian gas. In addition some theorists and politicians saw the measures taken by Russia rather as political means instead of an economic dispute.

Some see the matter of dependence rather ‘black and white’, for instance by stating that oil entered the economic system because it was the cheapest alternative and will leave when it becomes more expensive than other resources or when its end uses disappear (*Watkins, 2006*). In fact, the first part of this statement is likely to be true, while the latter can be debated. It assumes that oil is still the cheapest option in the world energy market. Furthermore it ignores the power of the oil lobby, which is not to be underestimated. In this section the concept of security of supply will be defined before assessing how this debate has been moulded. In addition the developments will be discussed using theoretical contributions that were elaborated in the previous chapter.

As mentioned in the introduction of this thesis the concept of security of energy supply caused confusion in the last decades. In contrast to the 1970’s this debate is now more diverse and therefore the terminology ‘economic security’ does no longer apply. Multiple new energy

consumers have entered the market, of which China and India are most dominant at the moment. In addition, there are evident threats, such as Al Qaeda and other terrorist organisations who deliberately target critical economic infrastructures in for instance Saudi Arabia (*De Wijk, 2006*). Moreover our dependence on sources of supply is growing while security still needs to be developed in for instance Western Africa or the Caspian Sea region (*Yergin, 2006*). Furthermore the flows of energy resources around the globe have recently been disrupted several times, naturally with regard to the Ukrainian dispute, but also in terms of Iran's nuclear program, attacks on oil facilities in Nigeria, growing tension between Venezuela and the United States, the economic shock that followed hurricanes Katrina and Rita and as a consequence of skirmishes between Israel, the Palestinians and Lebanon.

Among others these events caused national governments to rethink their energy policies, mostly in terms of security of supply. What makes this concept difficult is that its content differs among nations. To give some examples, energy exporting nations focus on security of demand, in Russia resources are reclaimed by the government again, China and India are no longer self sufficient due to their economic growth and the European Union mainly focuses on gas import dependence and possible expanding nuclear activities (*Yergin, 2006*). With all these definitions and policy formulations kept in mind it is argued that the world energy market is tightening. Future developments are not certain, given for instance the unexpected 'demand shock' caused by China and India and the lack of investments in many areas due to reasons of security explained above. Understandably this has fuelled debates about the ephemeral character of our current energy resources.

Arguably the concept of security of supply should be adjusted to current global challenges. Yergin (*2006*) states that two principles are important in this perspective. First it must be acknowledged that China and India have become major players in the world energy market and hence it is recognised that the energy security system has globalised. Secondly global energy supply routes are no longer cast-iron safe and thus need protection. Since many nations applied the concept of diversity of supply (in order to decrease dependence multiple suppliers are approached) and innovative applications of energy resources (for instance liquefied natural gas, LNG, which can be transported overseas instead of through pipelines) are more intensely used, securitising the supply routes is an amazingly difficult task. All in all this demands far going cooperation between nations.

What can the role of the European Union be? Member states will have to deal with the changes described above that are placed in the external context. Internally an extra dimension of the European Union is witnessed; the ongoing integration of the Union, for instance translated in the deepening of market integration and further enlargement which brings along new member states with specific patterns of energy supply and consumption (*Correljé & Van der Linde, 2006*).

In their study Correljé & Van der Linde (*2006*) use two different storylines in order to predict future development in the world energy market from a European perspective. The first alternative is called Markets and Institutions and refers to further liberalisation of markets and a more intense economic, cultural and social globalisation of markets. The second perspective (Regions and Empire) debatably sabotages the previous scenario, since it involves dividing the world into regions based on ideology, religion and political arguments. Unilateral activities such as the United States unfolded when it was attacked by Al Qaeda, or bilateral relations China is developing in order to guarantee enough energy supplies to feed its

economic growth are indications that the latter scenario is more realistic in a global perspective. Arguably the first scenario rather suits the European Union itself. The energy debate however no longer fits the regional perspective but has to be approached globally, as argued by Yergin (*2006*). It is therefore suggested that the European Union has to endure the Markets and Institutions scenario regionally to be able to participate jointly and in full in the Regions and Empire scenario which appears to be developing on a global scale.

Discussions to formulate one European energy policy have been fierce. The European Commission initiated several Directives to liberalise energy markets and thus complete another step in the integration process. Additionally the latest EC Green Paper acknowledges many of the challenges posed by the previously quoted authors. It recognises that European member states will in a timeframe of approximately thirty years see their dependence on imported energy resources grow from the current 50% to possibly over 70%. On top, these resources will mostly come from instable regions. Gas imports are especially mentioned, since the European Union depends on only Russia, Norway and Algeria which will provide the Union for approximately 80% of its requirements. Furthermore, global demand for energy resources is expected to rise with 60% by the year 2030, the climate is getting warmer, European Union energy markets are not developed and there is an urgent need for investment (*EC Green Paper, 2006*).

Most problems seem so much complicated that an integrated approach of European member states appears to be logic. Once again however appearance could prove deceivable. The transfer of competences towards the European level has been problematic, which has been the case in multiple other policy areas. In terms of energy policy, the United Kingdom has been the only initiator towards a common approach, when Prime Minister Tony Blair announced that the European Union needed to cooperate intensively in order to cope with future challenges as set earlier (*Hampton Court, 2005*). In one of the preparatory papers for the United Kingdom presidency extensive measures for cooperation are proposed, for instance to complete physical interconnections within Europe in binding long-term contracts, creating a European storage regime and reform markets and regulatory frameworks in order to encourage investments and facilitate long-term contracting (*Helm, 2005*). To a certain extent the efforts of the United Kingdom are not surprising since studies on European gas markets exposed that in particular the United Kingdom is vulnerable to gas supply emergencies given its limited storage facilities (*Stern, 2002*). Unfortunately most member states have not been so energetic in this debate, mostly due to various national interests, varying from fear of loosing substantive sources of revenue – in particular the Netherlands, which would be debatable since it is forecasted to run out of gas resources within thirty years (*Brinkhorst, 2006*) – to nationalistic protectionism, in the case of for instance France (*Hancher & Boersma, 2007*).

Linking the previous to the theoretical elucidation one should conclude that interdependence theory gained credibility, in fact there are multiple examples that support the concept of interdependence, however realists' assumption that interdependence would increase the chances of conflict to actually escalate can not be rejected. In particular energy issues have lately connected different parts of the world and its policy makers even closer, which is verified by examples such as the Russian-Ukrainian incident of 2005 or the struggles within the United Nations Security Council to lay sanctions on Sudan in 2006. These examples are an issue of concern, since in case of more positive examples such as combined efforts to develop a European Union energy policy so far the member states have not been able to bring home the bacon. Although some alternatives have been developed for the energy resources

that were used in the 1970's (even creative ones such as ethanol extracted from sugarcane, as has been done in Brazil), the emphasis is on the same minerals and since most of these are found in a limited number of nations the asymmetrical division mentioned by IPE is largely in place or even strengthened when considering that most exporting nations are using their maximum capacity (*Van der Linde, 2000*) and the number of importing nations is increasing. This recognition and growing instability certainly contributed to the launch of the current debate on security of energy supply. It furthermore feeds the idea that in the end increasing international trade can be an instigator for international conflict instead of a preventing force.

Identical to the First Oil Crisis energy resources have been used as political means of pressure (lately by for instance Iran and arguably Russia). Given the global efforts to secure national and regional supplies, this political usage is perceived as a threat. So far however is has not been perceived as an existential threat, although some believe that the United States went to Iraq in 2003 mainly to secure its oil resources and not to liberate the Iraqi people from its dictator. George Bush's remark concerning the addiction of the United States' economy to oil makes the perception of an existential threat more plausible. Terrorist groups like Al Qaeda however did recognise energy resources as an existential threat of their opponents, given attacks on major oil revenue centres in Saudi Arabia. This forced theorists and policy makers to come up with countermeasures such as securitising supply routes. Theoretically speaking the threatened nations have turned the terrorists into an existential threat, which is supported by the application of any means necessary as has happened in Afghanistan and Guantanamo Bay. Would it however not be justified to characterise the lack of energy resources itself as an existential threat?

One fundamental problem of the European Union in both scenario's is the lack of unequivocality. In terms of fighting global threats the European Union is heavily divided as was painfully revealed just before the American invasion of Iraq in 2003. In terms of energy the European Commission has as always been ambitious to formulate one European energy policy or initiatives lastly leading to this policy. So far, only the United Kingdom has been energetic to talk business where other nations hesitate about yielding competences. In other words, in terms of securitisation theory there appears to be lack of unequivocality on both vulnerabilities and existential threats among policy makers.

3.4 Dynamics of the European energy market

The arguments on energy related issues do not originate without reason. Therefore in this section facts and figures about Europe's energy market are described and clarified in a few words. The data have been derived from the BP Statistical Review of World Energy 2006. For the sake of clarity and historical accuracy, Europe in these sections refers to both the European Economic Community and the European Union.

The graph in figure 3 demonstrates the energy consumption of the EU-25 in the period of 1973 until 2005. The data have been derived from the BP Statistical Review and are based on those from all 25 current European Union member states, except Slovenia, Estonia, Latvia, Cyprus and Malta. It is assumed these data are not available. It is expected however that these data do not have a major impact on the results as shown below.

What can be delivered from this figure is that the 1973 Oil Crisis did not miss its impact on the oil consumption which was – and still is – the major resource of energy. It can be witnessed as well that the lack of oil was beard by an increasing usage of in particular natural gas and nuclear energy. However as soon as became clear that the OPEC could not maintain its embargo and started selling regular oil quantities again (*Correljé, 1998*) its consumption rose until the Second Oil Crisis in 1979, which is not elucidated further in this thesis. After this crisis oil consumption within European member states fell dramatically while the usage of natural gas en nuclear energy kept rising. This resource diversity is one of the mechanisms applied by European member states to reduce their vulnerability, as described earlier. Even though the member states proved able to apply other resources however, oil consumption has risen since approximately 1982 again, partly since prices fell and thus oil remained the most important energy resource by far.

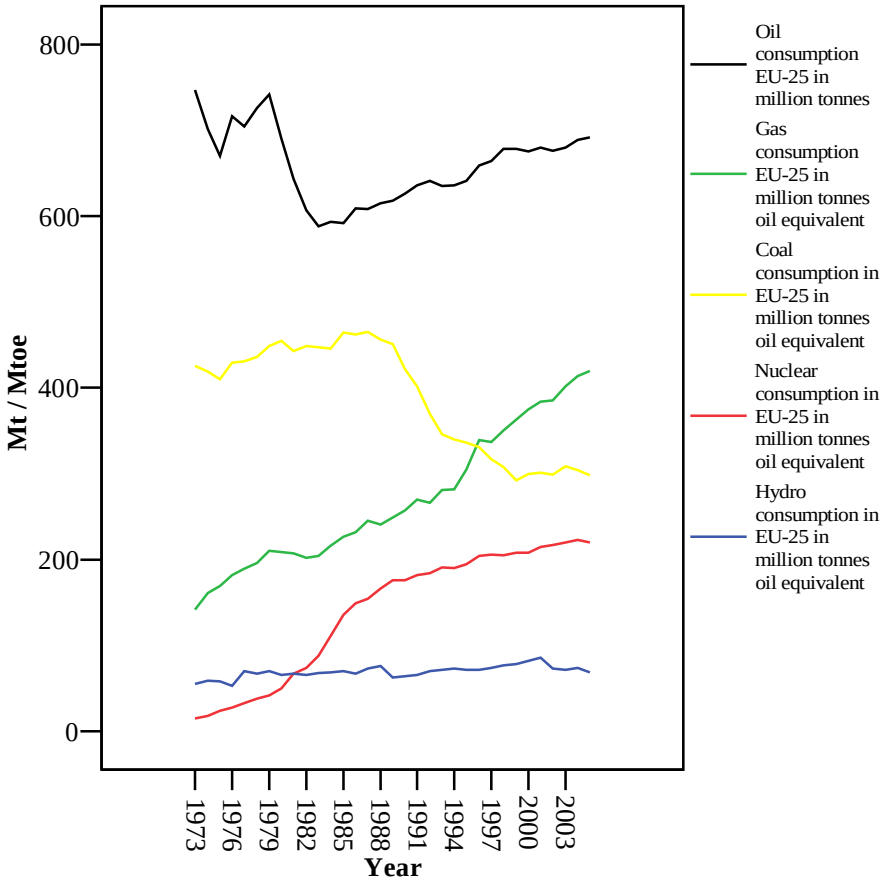

Figure 3. Europe's energy consumption development from 1973.

Consumption patterns could hardly be problematic when enough resources were produced, or in terms of Knorr (*1975*), when the Europe was part of the so-called born monopolies. Yet this is not the case. In the next figure the development of resource production within Europe is represented.

Oil production has been based on the production figures of Denmark, Italy and the United Kingdom. The bulk of the produced natural gas comes from Denmark, Germany, Italy, the Netherlands, Poland and the United Kingdom. The amount of produced coal is based on the figures provided by Czech Republic, France, Germany, Greece, Hungary, Poland, Spain and the United Kingdom. These data do not go back further than 1981. It is important to notice that resources of Norway are not included in these figures. Norwegian resources however do play an important role in this matter. In fact within the European Union the Netherlands is the largest exporter of natural gas while within the Europe is the major trading partner. Just outside Europe Russia and Algeria play important roles. Europe maintains important political and economic relations with these nations in order to secure oil and natural gas, in some occasions with more success and stability (Norway) than others (Russia).

Before the 1973 Oil Crisis apparently European states hardly produced any oil by themselves. The crisis made evident how vulnerable European economies were for actions such as those initiated by OPEC. It made countries more active in producing their own resources. This is confirmed by the graph, showing an increase in oil production from 1973 onwards, indicating revealed oil supplies, in particular in the United Kingdom. On a global scale however these supplies will not prove durable as is possibly indicated by the decrease in production since 1998. The production of natural gas has been rather stable since 1973 and a serious amount of coal was produced. As can be derived from the first figure in this section the consumption of natural gas by now exceeds the production figures. Still given the diverse supply routes that have been established it is expected that supplies of natural gas will be sufficient for the nearby future (*Correljé, 1998*). The consumption of coal has drastically declined, probably due to environmental concerns and policies. Yet it must be noted that combining the two previous graphs painfully makes clear that European states are net importers of all major energy resources they tend to use.

Another important development in Europe is delivered by recent investments in renewable energy resources. The European Commission from 1997 onward ambitiously tried to encourage member states to enlarge the share of renewable energy in the gross domestic product up to 12% in 2010. Starting point of this ambition is the statement that security of supply can not solely exist of lessening import dependence and raising production figures. Diversification of resources and technologies is necessary, thereby inspecting the geopolitical context as well (*European Commission, 2004*). In addition renewable energy resources form a valuable expedient when addressing the problematic situation of climate change. It must be concluded that despite progress that has been made the current policies will not be sufficient to reach the adjusted 20% – that was formulated as a new target when new member states formed the current EU-25. Nevertheless it is inspiring to witness the progress that the current member states make to lessen their dependence of traditional energy resources such as oil: in 2002 15,2% of the total energy generation was provided by renewable energy resources, while 33% is provided by nuclear energy.

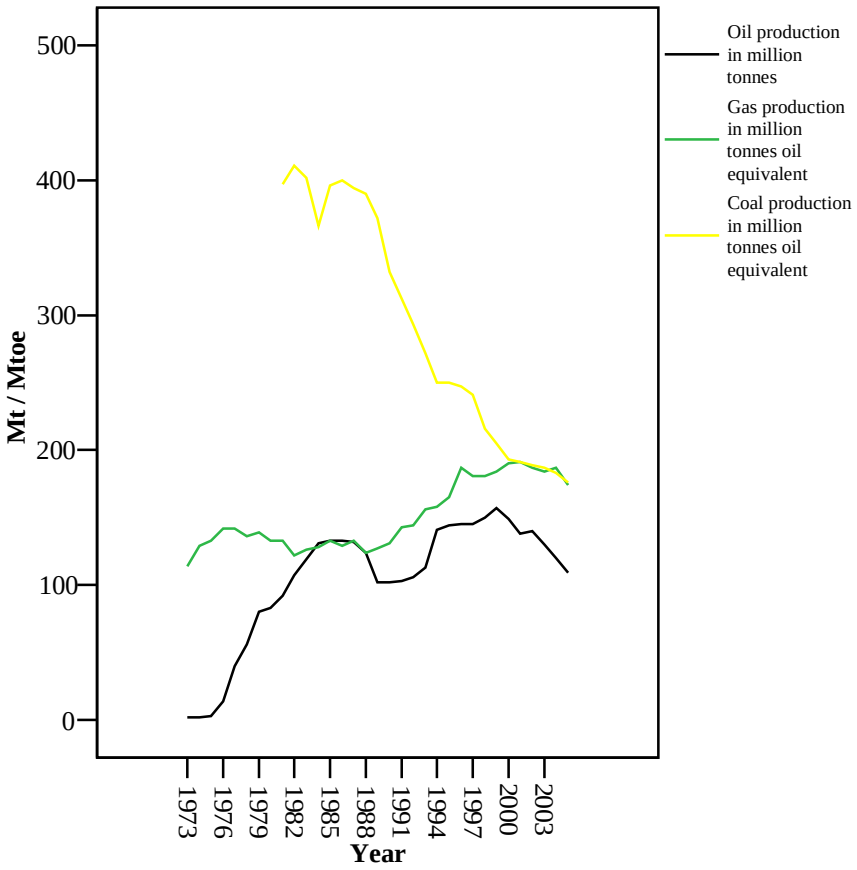

Figure 4. Europe's energy resource production from 1973.

The future does not seem to bring much joy from this perspective, which is validated by figure 5, expressing the proved oil and natural gas reserves. The previous is based on the figures of Denmark, Italy and the United Kingdom, while the latter is based on those of Denmark, Germany, Italy, the Netherlands, Poland and the United Kingdom. Again the other nations are not mentioned in the data and therefore likely to be not relevant. The coal reserves are not mentioned since they are nearly negligible with only small resources in Germany, Hungary, Poland and Check Republic. To put these data in a global perspective attention for section 3.6 is encouraged.

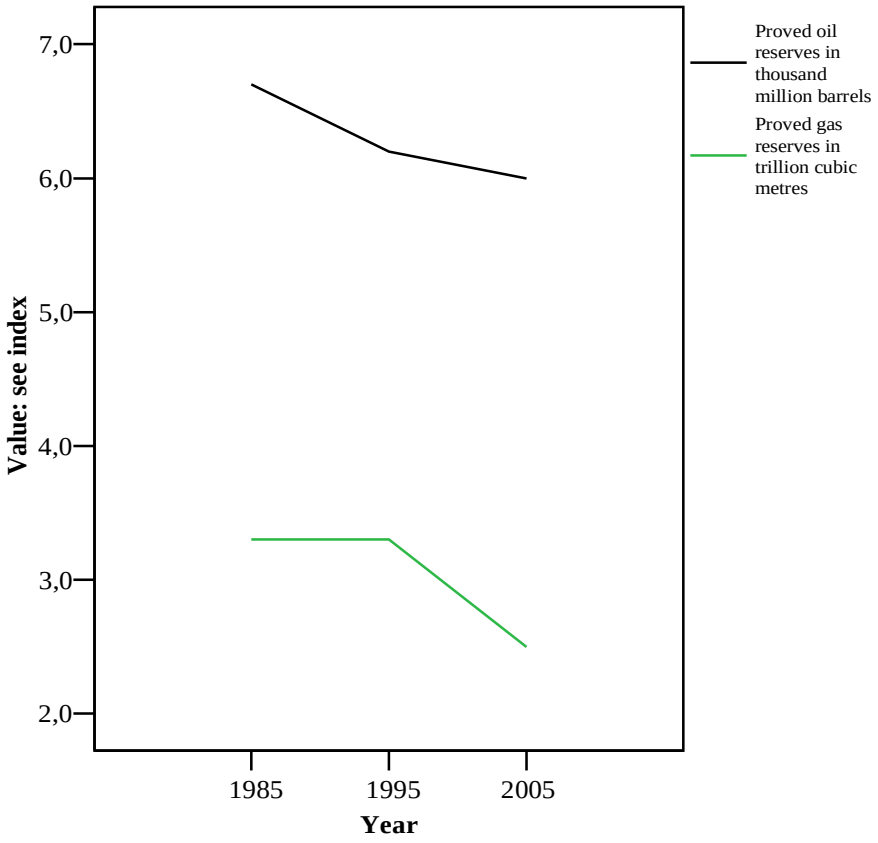

Figure 5. Europe's proved oil and natural gas reserves.

3.5 One single European energy market?

Although the single European market was completed in 1992, the energy markets were no part of this. The idea to use energy market development to enhance European integration – and far going cooperation with Eastern Europe and Russia – was formulated in the 1994 European Energy Charter (*Axelrod, 1996*). Since this was believed to become a major contributor to enhance welfare and make the European Union more competitive, the European Commission initiated proposals in order to reform European electricity and gas markets. After extensive national tug-of-war the first directives were adopted in 1996 and 1998 for respectively electricity and gas. These directives intended to gradually implement competition in the European markets and had been implemented by the member states halfway 2000, albeit at varying pace and sometimes rather reluctant (*Arentsen & Künneke, 2003*). This was underlined by the conclusion of the European Commission in 2001 that extra measures were needed to complete the internal energy market (*European Commission, 2001*) and in 2003 the Second Electricity and Gas Directives were adopted to reach this goal. These directives held important notices about unbundling issues (separating the production and supply sides of energy networks), non-discriminatory tariffs and so-called third party access (TPA) to gas storage facilities. Furthermore minimum standards of public requirement were formulated and member states were asked to appoint an independent regulator to safeguard and control the market mechanisms.

These measures were formulated in order to optimise the internal market of the European Union and involve energy in it. So far member states designed energy policy based on national considerations and therefore policies differed substantially. In most cases the development of the national market required moving from (semi)monopolistic energy sectors to a free market system of the European Union (*Arentsen, Fabius & Künneke, 2001*). In addition none of the countries had adopted any measures aiming at a more liberalised system. The only exception in this matter is the United Kingdom, which from 1980 onwards transformed its market into a more competitive version by assigning competences of this process to its independent regulator (OFGEM) which in addition was backed by the British government (*Arentsen & Künneke, 2003*). Other member states have found it rather difficult to reorganise its energy sector, possibly because these countries have difficult connections to the market (for instance Portugal) or simply because the will and perceived necessity to reorganise is somewhat minimally developed (for instance France). This situation is thwarted because the supposed benefits of liberalisation do not appear that obvious from recent evaluations in the United Kingdom (*Energy Review, 2006*).

To all member states in terms of market structure the directives of the European Commission changed this structure from small and nationally oriented ones to a large and regional system. Because of the free market mechanism it is unlikely that small national energy companies will be able to survive the competition. This is for instance perceived in the Netherlands where major energy companies strongly opposed the far going implementation of the latest gas directive by the Dutch government, in fear of foreign takeovers (*Hancher & Boersma, 2007*). This example indicates a more structural problem in the light of the European directives, namely the fact that they tend to be rather uninspired compromises and therefore provide minimal guidance for the true establishment of a new type of market (*Arentsen & Künneke, 2003*). Put differently, the directives leave much regulatory decisions to the interpretation and wishes of the member states, guaranteeing different positions in the implementation stage of the internal market. In the end it is expected that the European market will consist of several large players controlling energy supplies and its distribution. Reasons for this expectation are the earlier irregular development of the internal market and the somewhat protective approach of some national governments, as observed in for instance France and Spain (the latter being rectified by the European Commission in 2006). It seems to make national companies of some countries more vulnerable for foreign takeovers than protected ones. In addition some foreign companies have indeed developed a commercial orientation whereas others are still going through the transformation from a national protected environment to one European market (*Arentsen, Fabius & Künneke, 2001*). One can wonder whether this development is favourable for the development of a free market, since development towards a structure with only a number of massive energy players could move towards an oligopoly, probably not promoting competition and safeguarding the interests of individual consumers.

Despite the efforts displayed by the European Commission, so far the internal energy market has not been established. Following first indications in 2005, the Commission in 2006 released a preliminary report on the supposed malfunctions of the electricity and gas markets. The reported remaining barriers are: market concentration, vertical foreclosure (limited access to infrastructures prevent new entrant suppliers from offering their services), lack of market integration, lack of transparency and price formation. To recapitulate these malfunctions in the most succinct way: the European Union is still far from one single internal energy market. On the one hand an ambitious European Commission has tried to develop one single energy market, while member states on the other hand have proved that energy concerns to them are

still mostly national concerns which they find difficult to yield. In addition the directives and regulations as formulated by the Commission have been influenced by compromising forces and as a result they lack the power to actually oblige member states to comply with its intentions. This creates and interesting field of burdens but is not contributive when considering the aims of the European Commission.

3.6 Global trends in the energy market

Given the fact that energy issues – as became clear in the previous sections – turned into a global issue of supply and demand, this final section briefly identifies trends in the energy market. Again the data have been derived from the BP Statistical Review of World Energy 2006.

An interesting feature is the regional energy consumption pattern, which is expressed in figure 6 below. It occurs that the patterns of North America and Europe are rather similar. It has to be noted that the data of the European consumption comprise those of (amongst others) Russia as well, slightly distorting the European Union consumption pattern. What is evident though is the diversity of energy resources utilised within the European Union these days. The usage of natural gas has exceeded that of oil, which makes sense given the significant supplies within the European Union itself and abundant resources in neighbouring Russia, Norway and Algeria. Furthermore some member states developed significant nuclear energy resources, but this varies among nations. It can be witnessed that Asia still depends to large extent on the usage of coal and that in particular natural gas is not often used. It remains to be seen how fast this picture will change, given the enormous needs of energy resources of in particular China and India. It is likely to expect that in the nearby future these nations will put a substantial claim on the world oil and gas supplies. What finally sticks out is the enormous share of hydroelectricity in South and Central America, but this will not be unravelled in detail.

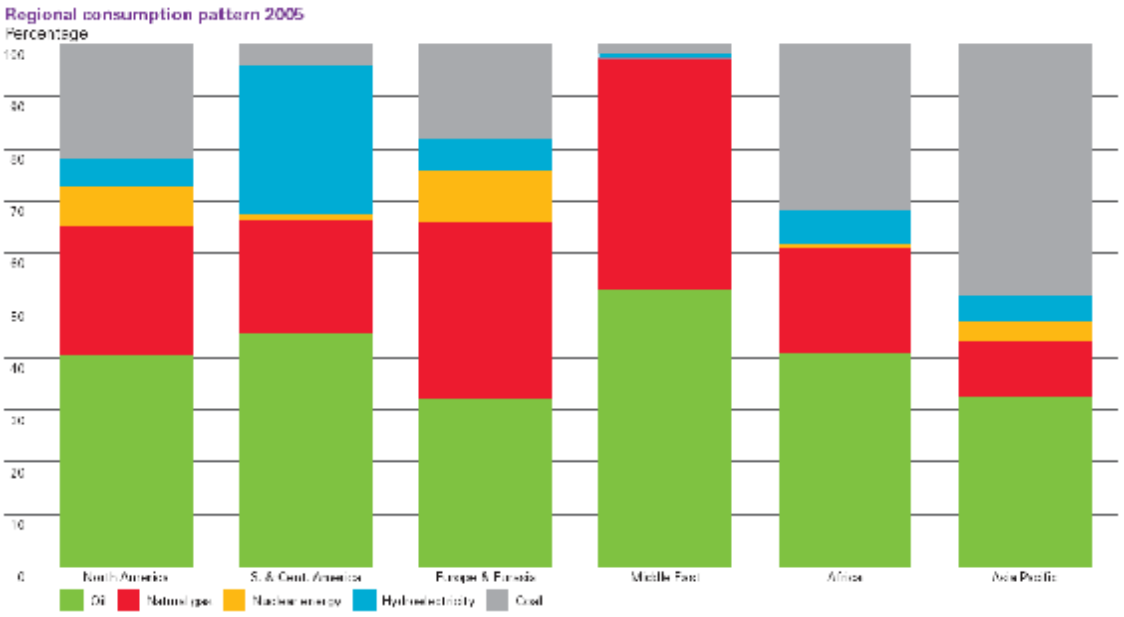

Figure 6. Regional consumption patterns of energy in 2005.

So far it has been established that despite energetic efforts oil is still the major energy resource utilised in major industrialised countries and also elsewhere. Figure 7 illustrates which regions did not succeed in cutting their oil usage, whether intended or not. In general it is argued that nations in North America have not been able to cut the consumption per capita. This goes in particular for the United States and Canada, the latter possibly for reasons of own supplies. Also in the Middle East consumption per capita rates are among the highest, but this is not surprising since most resources are located here. Given the somewhat higher consumption rates in Russia and Venezuela for instance, it seems safe to conclude that consumption rates are either high because local supplies make this cheap or because countries have highly developed industries that put an extensive claim on energy resources. What is worrisome about this overview is the fact that fervently developing nations such as India and China are on the rise but not even represented yet, while resources are evidently getting scarce (*Van der Linde, 2000*).

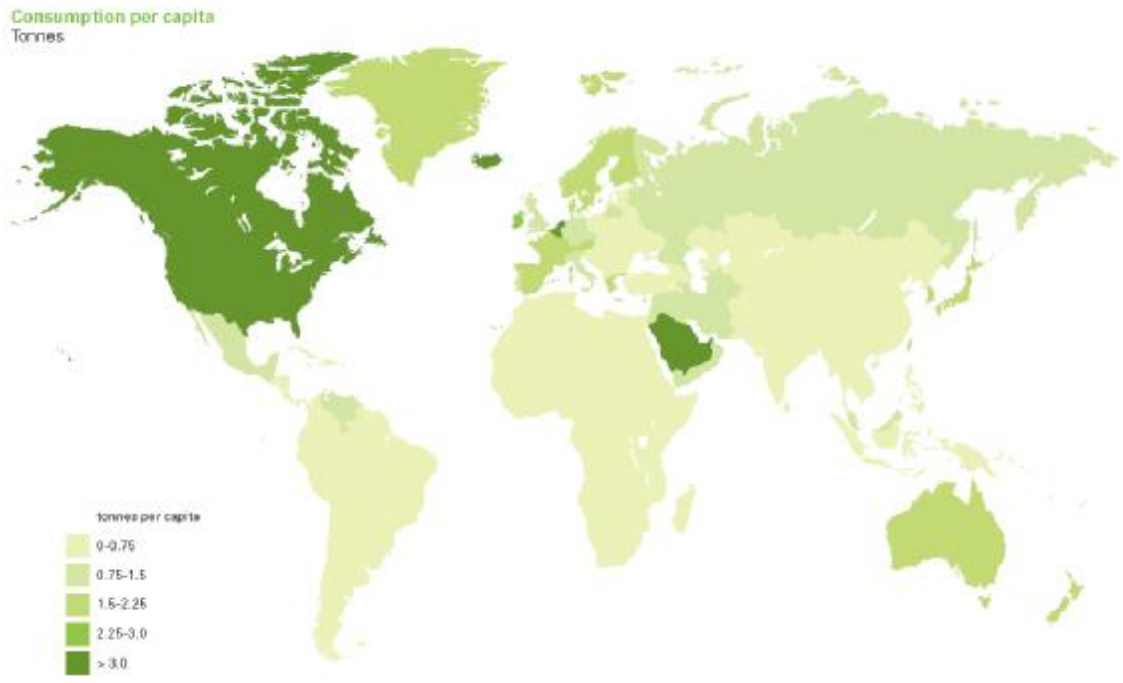

Figure 7. Oil consumption per capita in tonnes, 2005.

With an expected sharp increase in usage of oil in Asian nations the pressure on oil producing regions will be growing. What is worrisome is that the bulk of the available reserves are in unstable parts of the world, in particular in the Middle East. This is expressed in figure 8 on the next page. An interesting figure is further that current market leading nations (in particular the United States) and expected future world dominators such as China and India possess the least of the world proved reserves.

Figure 9 stresses the importance of the Middle East region in terms of energy supplies. Also concerning gas reserves this region is the most important in the world. What is somehow comforting is the competition in this market segment mostly from former U.S.S.R. nations,

although too much cherish would be exaggerated given the unstable condition in terms of politics, economic policy or human rights of many of these nations as well. From the positive perspective however, they offer an alternative to the Middle East. From a European Union perspective it seems to prove wise that natural gas has been given such an important role in our energy applications over the past decades. The relative proximity of major supplies and new inventive applications such as LNG make the efforts of stabilising and easing relations with Russia through for example the Energy Dialogue (initiated in Paris, 2000) worthwhile. The development of LNG – although convenient – brings risks as well, since other major consuming nations can through these techniques get hold of natural gas resources easier than in the past. This 'global shopping' in other words offers both opportunities and threats. Some theorists argue that these developments introduced the complexities of geopolitics to the gas industry and refer to the 'gasification of international relations' (*Van der Linde, 2006*).

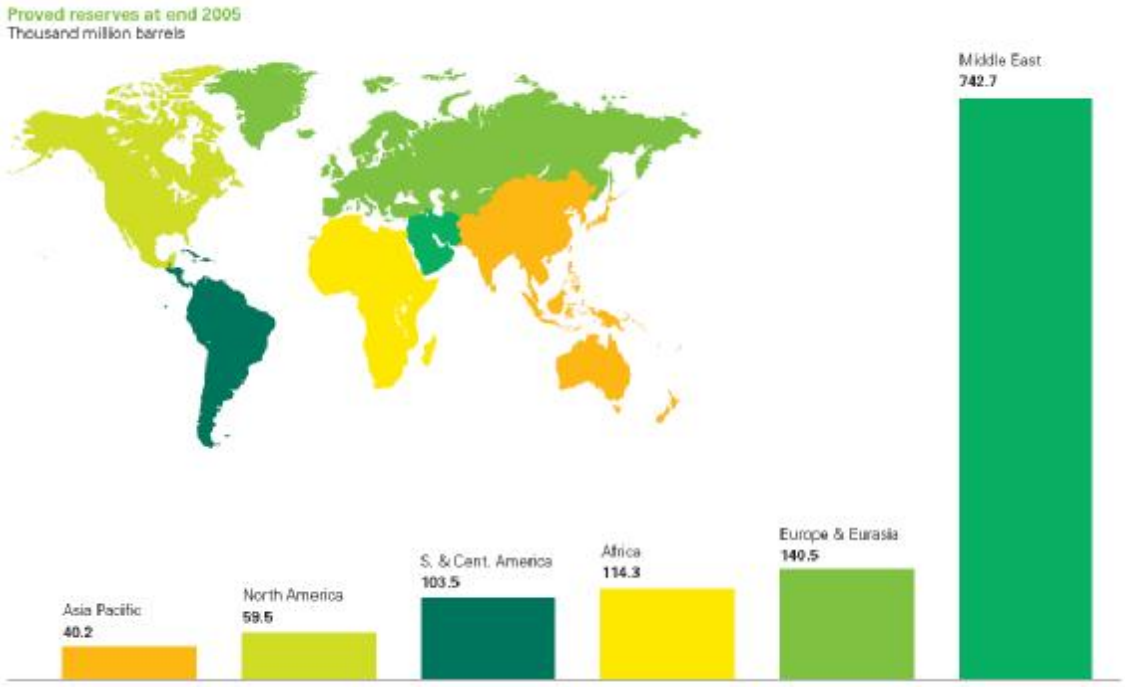

Figure 8. World proved oil reserves in million tonnes, 2005.

For the European Union, the partial shift to usage of natural gas seems a rather logic answer to the oil crises during the 1970's. First of all it appeared that several nations possessed extensive supplies of natural gas themselves, while nations relatively nearby proved to possess huge provisions. Figure 10 shows an interesting characteristic of other gas usage centres in the world. It appears that also Japan has developed extensive and diverse LNG routes, although quantities of the imported gas are rather limited. Perhaps when nations such as China decide to invest in natural gas more extensive pipeline routes can supply this region with more natural gas. This would be logic given the expected growth of energy consumption of the nation, the relative proximity of neighbouring Russia and the possibilities techniques such as LNG promise.

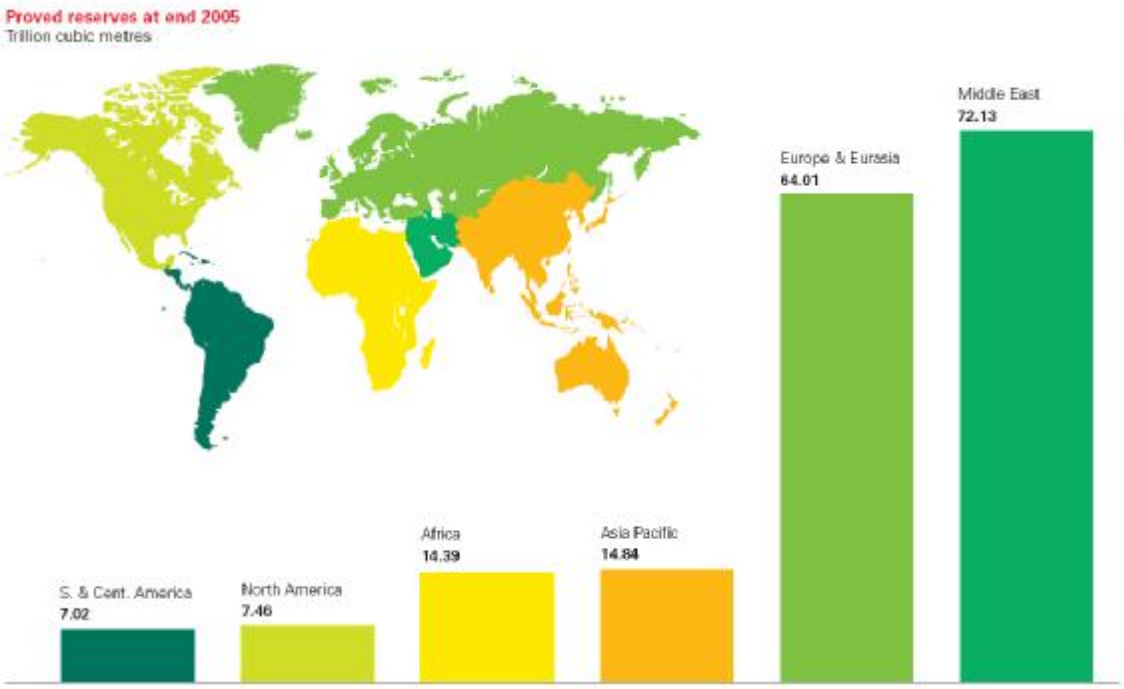

Figure 9. World proved gas reserves in trillion cubic metres, 2005.

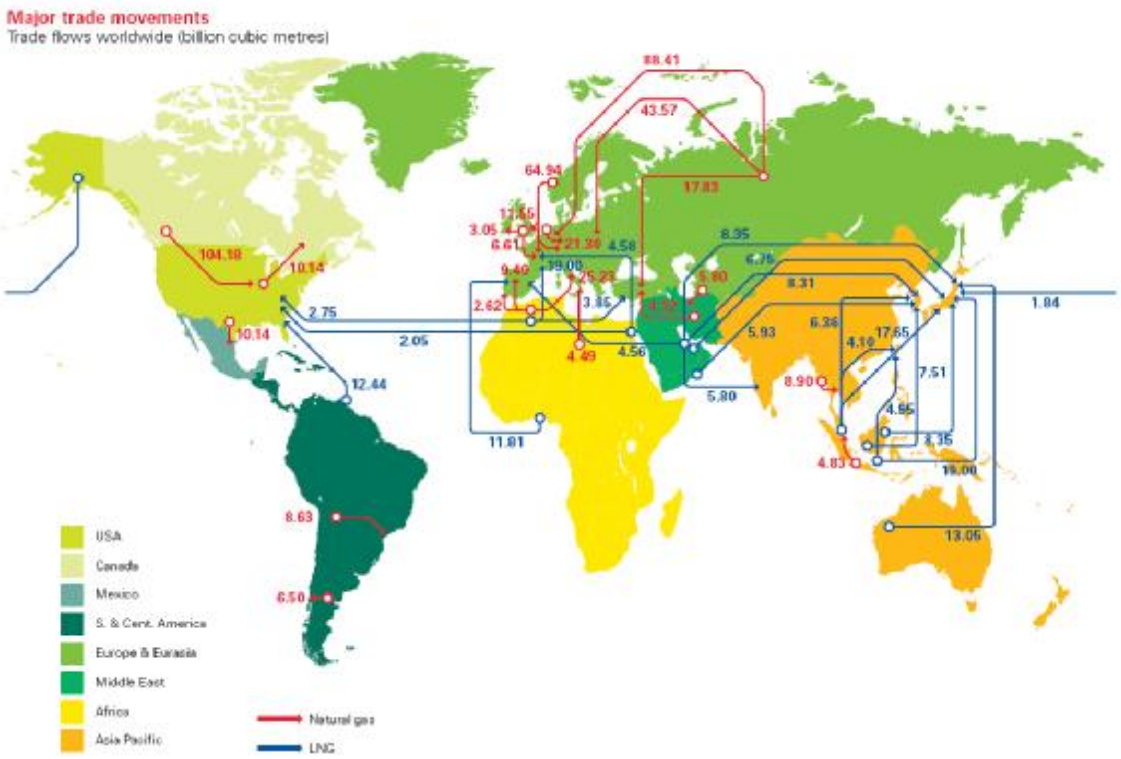

Figure 10. Major trade movements in natural gas and LNG, 2005.

An alternative sometimes referred to when considering the scenario in which the world runs out of oil and natural gas, is coal. The final figure in this section on the next page demonstrates the slightly more balanced division of coal resources in the world. One of the reasons why usage of coal has been declining rapidly as described earlier are its radical impacts on our natural environment. Most supplies however are located in industrialised or growing regions, possibly making coal an interesting energy resource for the future.

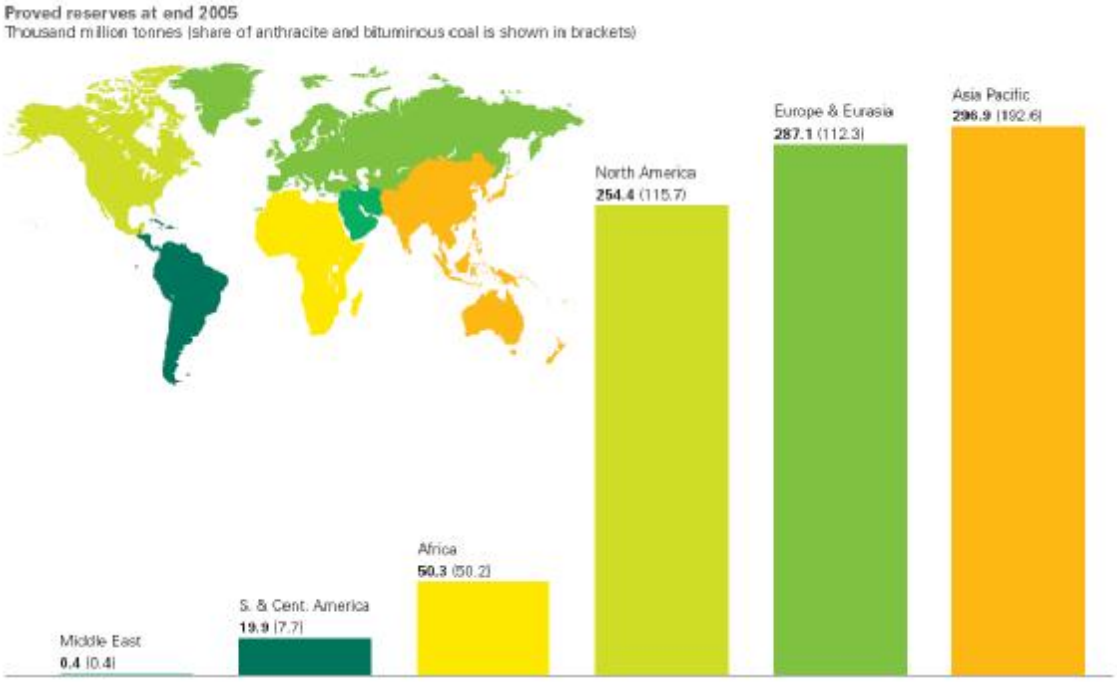

Figure 11. World proved coal reserves in thousand million tonnes in 2005.

3.7 Conclusions – European energy dependence

The debates and arguments that were depicted in the previous sections can be divided in two different categories. First political attributes were recognised, such as the position of the Middle East in the energy debate and fear for too much dependence from in particular these nations or the evanescent character of energy resources in general. A second category comprised market specific attributes, for instance in terms of energy resources and policy initiatives.

Considering the political attributes in the economic security debate and the security of supply debate several concluding remarks are appropriate. What is evident from both debates is the critical position of the Middle East. The nations in this region have been labelled 'born monopolies' for valid reasons. During the 1970's the First Oil Crisis painfully made clear how dependent industrialised nations in Europe and North America were on this region. This crisis furthermore fed theorists like Knorr (*1975*) in their conviction that growing interdependence would be the breeding ground for future conflict. In fact this is precisely what happened:

interference of Western nations in the Yom Kippur War caused Arabian nations to use oil as a political mean of pressure to express their disagree with the support of their arch enemy Israel. This however does not mean the argument of Knorr has proved definite, since human security studies suggested the opposite, namely that growing interdependence has increased chances of conflict, but decreased chances of actual escalation. Considering the facts the latter opinion is plausible. Since the 1970's many nations worldwide have developed and are now participating in global affairs, for instance trade or the search for energy resources. There is no support to argue that this growing interdependence increased the number of escalating conflicts. What has been argued is that unilateral behaviour by powerful nations has increased (examples are U.S. invasion of Iraq and the Chinese veto against military intervention in Sudan), diminishing the offensive power of international alliances such as the United Nations. This can indicate an increase in future chances of conflict, but does not provide evidence that growing interdependence is a breeding ground for future conflict.

From a security perspective it seems energy dependence has not been labelled as an existential threat. Following the Oil Crisis nations applied different strategies to control their dependence and partly with success. Even nowadays, with growing instability in the Middle Eastern region, extreme measures have not been applied to secure oil supplies, although some have argued that the United States mainly invaded Iraq to secure 'their' oil reserves. It was acknowledged however that terrorist groups like Al Qaeda have identified energy dependence as a potential existential threat of their Western opponents (given for instance the attacks on oil platforms in Saudi Arabia) and for valid reasons, since our economies have been relying on our current energy resources and the European member states are still relying on other nations. In addition some research groups identified energy dependence as an existential threat as well, given the organisation of separate research groups focussing solely on energy.

Market specific attributes have changed somewhat over the last decades. Whereas the First Oil Crisis made clear how dependent European states were on oil from one specific region, actions have been initiated since to reduce this dependence. This is proved by the increase in usage of natural gas and nuclear energy, degrees varying per nation. In addition inspiring investments and results have been reported in terms of renewable energy resources. European states did find alternatives to Middle Eastern oil – in the form of nuclear energy, natural gas or oil from for instance Norway and Russia – but are still dependent on foreign supplies to an important extent. In terms of usage and conservation European states have done an appreciable job, but there is more to it. First the energy market nowadays comprises the globe more than during the 1970's, with countries such as China and India developing rapidly and pushing the world demand for energy resources. This caused most energy exporting nations to produce their maximum possible amounts, while demands are still growing. Furthermore in terms of European Union energy policy member states have been hesitant to yield competences to the supranational level. If not for the effectiveness of the internal market, unambiguous policy is desirable given the global dimension the energy debate has adopted. In terms of interdependence it is fair to argue that adopted alternatives to Middle Eastern oil decreased the European Union's energy vulnerability, while the rapidly increasing global quest for resources by developing nations sort of compensated and might outrun these European achievements.

4. CONCLUSIONS

4.1 Introduction

In this final chapter the results of this study will be presented. In the first section it will be assessed to what extent the objective of this research assignment has been fulfilled. Furthermore concluding remarks will be formulated using problem formulation and research questions as set up in the introductory chapter. At the end of the first section a suggestion is put forward what these results in fact constitute in terms of European Union future energy policy. In the second section of this chapter the content of the thesis as well as the process in which is has been shaped will be reflected upon. In addition suggestions for further research are put forward.

4.2 The single horsehair

The formulated objective of this research assignment stated to compare both energy debates, which for the sake of clarity have been labelled economic security and security of supply. Although the latter terminology has been used in scientific contributions from both eras, during the 1970's security of supply simply meant delivering sufficient supplies at affordable prices (*Yergin, 2006*). Given the more economic character of the debate during the 1970's the terminology economic security seems appropriate to distinguish between the different timeframes. In addition the aim of this thesis was to investigate what this comparison could mean in terms of future energy policy from the perspective of the European Union.

Changes that took place in between the two different timeframes must be described. First, most fundamentally, the European Economic Community developed into the European Union. While this complex development has not been dealt with within the scope of this thesis, it is important to underline the difficulties it brought in terms of clarity. To avoid miscommunication both the Community and the Union have been referred to with 'Europe' when intermingling could not be avoided. Second, the Cold War ended. This put a hold to the ideological warfare that had been carried out since the Second World War and instigated revolts in many nations. In terms of this thesis, the results of this were two-fold: the development of the current European Union got a drastic impulse and the growth of the number of liberal democracies caused market participation to grow and therefore an increase in global energy resource demands. The third change resulted directly from the First Oil Crisis and comprised the search for more suppliers of energy resources. The end of Cold War meant an expanse of the space to search. We can conclude that the positive consequence of this quest has been that we are less dependent from Middle Eastern oil and gas than we used to be. In addition we found several resources of oil and gas within or just outside the European Union territory itself, in for instance the Netherlands and Norway. European Union member states also succeeded in partly changing their resource usage by adapting different energy resources, albeit with mixed results. On the other hand most of the new resource suppliers are governed by unstable regimes just like most Middle Eastern ones. In terms of credibility not much has changed in other words. Furthermore and more fundamentally our dependence did not structurally diminish. Despite our quest for alternatives we must therefore conclude that if we want our economies to flourish, we will be structurally dependent.

The chosen theoretical framework offered different perspectives which lead to different conclusions. First it appeared there are important interfaces between interdependence theory and Knorr's theory of political economy (IPE). Both theories searched for options to explain the growing complexity of world politics as it developed after the Second World War. Whereas interdependence theory focussed on mutual dependence (whether symmetrical or not) between nations and tried to define dependence in terms of sensitivity and vulnerability, IPE concluded (given for instance the failure of classic security theory in Vietnam or new economic challenges such as the First Oil Crisis) that economic relations presented obstacles to foreign and domestic policy and started studying causes and impacts of international institutions and cooperation among states in economic affairs. The third dimension that was added to the framework focussed on security issues. The relatively new theoretical contribution was added to the framework while lately the call for approaching the energy debate no longer as a pure economic issue seemed more realistic. This assumption is for instance supported when considering the repeated involvement of energy issues in the international political arena, as observed recently in case of Sudan (and the related Chinese veto in the United Nations Security Council) and the Russian-Ukrainian dispute over gas in December 2005.

The current status of the European Union in the global energy debate can hence be typified differently using the previous theoretical contributions. Pluralist supporters of interdependence theory are likely to reason that growing mutual dependence among nations might increase options for future conflict, but in fact decreases chances of actual escalation of these conflicts. Therefore it is likely to reason that although energy resources are becoming scarcer by the year – and in addition are doing so faster than before given the growing number of consuming nations – world politics should be able to realise a joint solution. In addition interdependence theory comprises more facets than energy issues. It is debatable whether from this perspective a conflict over energy resources will be possible, or in other words, whether there in fact exists a single horsehair. Interdependence theorists are likely to deny this scenario.

In terms of the European Union it is plausible to expect the scenario of Markets and Institutions (*Correljé & Van der Linde, 2006*) which will ultimately lead to a European Union energy policy. Subsequently the European Union will participate in the other scenario, labelled Regions and Empire, in which it will have to compete for energy resources with the United States and major powers from Asia. What happens after that is difficult to predict and it validates the question whether the referred joint solution can in fact be found and thus whether the assumption of growing interdependence and diminishing chance of escalating conflict is feasible. There is a certainty that somewhere in the future our current resources of energy will be finished. Some have argued this predicament will be reached in the nearby future, but the fact is that no one really knows. Either way, by the time our current resources are finished we may have discovered new methods of energy instigation or we may not. The first scenario promises a calm and stable future from an energy perspective and makes it legitimate to presume that future conflict over energy resources can be avoided. The progress in developing alternatives over the past three decades however, suggests a future that is less rosy. The second scenario then promises competition among the strongest regions for the final energy resources in order to stabilise their economic systems and feed their economic growth. It is hard to belief this will occur without conflict since the interests will be enormous. This could ultimately result in military clash, in that case rejecting the interdependence premise that warfare over energy resources will be impossible.

Following the more realistic-oriented political economists this less optimistic scenario will be reached on short notice. From this perspective it can be argued that the evanescent nature of energy resources already proved to be a breeding ground for conflict, referring to the mentioned incident with Russia and Ukraine in 2005. If these occasions will develop, it is interesting to philosophy how the European Union will position itself in comparable but larger conflicts in the future. It can be imagined that a univocal performance will be difficult given the different interests that are reflected in national energy policies. How to make a stand without vision? What if more negative situations occur, in which eventually military force is used to settle disputes on energy resources? Will European member states respond conform national initiatives? Can the United States still play a dominant role? Will they still bother considering their own occupation with energy resources? It is unlikely to expect the European member states to make a clear stand without common policy. In this scenario member states will let their national interests prevail, which will cause some highly dependent nations to be hit hard while others have their own resources and storage capacities. Since national interests will prevail it is unlikely that the European member states will solve this predicament through combined military force, let alone the question whether this would be possible. Military intervention in other words is not realistic. In addition it can not be expected that the United States will solve this matter for us, although most of its conflicts involve the same the European Union would have to solve. Whether this will remain the case is debatable.

Continuing to securitisation theory it was suggested that the lack of energy resources itself can be identified as an existential threat. Denial of the volatility of energy resources is unrealistic, albeit the timeframe is debatable. Experts however all agree that the clock is ticking. Furthermore the importance of oil and natural gas for our economic systems is no secret. From a theoretical angle, if energy resources – or the future lack of them – will not be marked as an existential threat there will in terms of policy making be no problem. It will take the European member states remarkable time to develop one European energy policy given the notable differences in their national approaches and interests, but in the end this will work out and contribute to further European integration. If on the other hand energy resources would be stigmatised as existential threats, what means necessary could be used to securitise this issue? The European Union will have to fall back on its political powers, but will this be sufficient? Some theorists have argued that the United States already used its military power in order to secure the energy resources it needed (referring to the invasion of Iraq). In addition China has proved not to be occupied with internationally respected values when its energy resources are concerned, given for instance its veto to send United Nations' troops to Sudan in order to prevent genocide from taking place. This behaviour has been labelled 'weak globalisation' (*Van der Linde, 2006*) and is difficult to understand for European member states. The future will ask them however to adopt a similar, somewhat indifferent attitude when global matters collide with personal issues such as availability of energy resources. Given the importance of our current energy resources for the very survival of our economies it would be naïve to structurally deny the fact that the lack of energy resources is an existential threat. While the European Union has been in this same position over the past three decades however and predictions did not become reality, it is fair to question whether there is an immediate existential threat.

Even if major developed regions in the world spare each other, energy resources provide an interesting case. As pointed out by Knorr (*1975*), nations possessing resources are 'born monopolies'. Increasing scarcity only enlarges the active economic power of these born

monopolies, which have proved to use energy resources as political means of pressure if considered necessary. Some counterweight is probably provided by transnational cooperations operating the exploitation of energy resources, but it is plausible to assume that national governments have the final say. This makes OPEC an important player in global politics, referring to its decision's impact. Given the fact that most of these nations are considered to be states in which civilians are in general not properly looked after, passive economic power of developed nations in terms of food, aid workers or development knowledge might not remain valuable. If not, the only power left is military, underlining the breeding ground for future conflict as made explicit by these theorists.

An up to date case pointing towards such a stalemate is delivered by Iran, whose authorities demand the right to enrich uranium (supposedly for energy purposes) and although the entire world opposes, it simply threatens to close its oil pipelines when economic sanctions are laid upon the nation. All in all this theoretical angle does not forecast a rosy future, but recent occurrences have reminded us that this scenario can be real. On the other hand similar predictions in response to the First Oil Crisis have not become reality, so are comparable concerns corroborated? It must be mentioned as well that in particular human security studies revealed that growing interdependence in fact diminishes the number of escalating conflicts in this world (*Mack, 2005*). Energy resources can prove exceptional and their growing importance can stimulate nations to take measures they in general would not take. Provided that past predictions did not come true however and the future scenario still contains many suggestive elements, it is justified to question the fuzz on energy resources.

The European Union energy market has undergone thorough changes since the First Oil Crisis. This occurrence instigated a search to own resources which were among others found in the North Sea. Compared to the Middle East, however, these were relatively small-scale projects. In addition European member states searched for multiple future suppliers to reduce its dependence of Middle Eastern countries. While partly switching to the usage of natural gas (of which massive resources were found in for instance the Netherlands), the European Union diversified its supply routes, since nearby Russia, Norway and Algeria possessed major natural gas and oil resources as well. So far governments have been reticent to cooperate with for instance Russia, based on arguments of political instability and lack of human rights. Despite this diversification dependence from other nations however remained and the Russian-Ukrainian incident in 2005 painfully made clear that this is no pleasant position to be in. Referring once more to the 'born monopolies' however the future seems to provide no more than this unpleasant position. A logical question is then how to deal with this.

Hindrance is delivered by the lack of clear-cut policy within the European Union. This status quo is maintained given the different interests and ambitions of the member states. Some have been energetically involved in shaping one European energy policy. The United Kingdom is the exponent of these nations. On the other hand conservative governments such as France still have major difficulties yielding competences to the European Union level. From a scientific point of view the clash between supranational and national interests in the energy debate is inspiring. To reach practical and sustainable solutions in vital matters for all member states and thus the European Union, however, this clash could proof disastrous. As was outlined briefly the European Commission has been enthusiastic to formulate one European energy policy. One of the mechanisms applied is liberalisation of electricity and gas markets among member states. While implementing the relevant directives it appeared once more that the interests and willingness of member states to implement these directives differ

substantially. Alongside the United Kingdom also the Netherlands have implemented the directives ambitiously, while nations such as France only apply the necessary requirements. Given the different interests at stake in the energy debate it is not incomprehensible that nations have difficulties yielding competences. Envisaging the long term however all governments should acknowledge the transient character of energy resources and the binding element this provides, namely the choice between resolving this matter unilaterally or with combined European forces. It is evident that on global scale the latter alternative provides more possibilities.

Given the previous and considering the different theoretical scenarios European Union member states should jointly yield competences in energy affairs to the supranational level in order to formulate one European energy policy. This policy should not solely consider matters such as the current debate on security of supply or the mentioned diversity of supply. These are quite short-term and practical solutions which as argued have a somewhat perceptive character. Series of attempts to reduce our dependence during the past three decades have demonstrated this is not the essence. This notably does not make them irrelevant, on the contrary. European leaders however should deliberate more fundamental questions in terms of energy resources. Recently we got proof of our current vulnerability (Russia / Ukraine) and every shock in oil prices delivers some more. The question to ask would be whether we want to maintain this situation. If yes, or if no other option is envisaged in the nearby future, we are better of excepting our vulnerability and focus on implications this has. Referring to the title of this thesis it means accepting the sword of Damocles as it has been for the past thirty years. If then we want to prevent the single horsehair from snapping we should address different and more fundamental questions than we have done during the past decades. Should we still be concerned about Iran's nuclear ambitions and threaten with economic sanctions? Should we still be worried about large interference of Russian Gazprom in the European energy market, possibly disrupting some of Europe's national dignitaries in the energy market? In the scenario of unchanged energy resources it seems advisable to except the dependence of the Middle East and Russia. The European Union does not posses means to force its will upon other nations like the United States can. In addition it is debatable whether this scenario is realistic. On the other end of the spectrum China is confirming that excepting dependence on energy exporting nations can be successful. This strategy however requires to let go idealistic values such as establishing some sort of universal liberal democracy. Furthermore it demands that political power is occasionally used to look the other way when important energy suppliers are concerned.

Arguably there is an alternative. To avoid these choices the European Union member states can vigorously seek to develop alternatives to the current energy resources, or in other words, diminish their current energy dependence. Success would mean an important lead with supposedly massive economic consequences, since at length all developed regions will need this knowledge. It would remove our currently revived worries concerning energy resources or in terms of this thesis, it would eradicate the sword of Damocles. Failure on the other hand will throw the member states back to the earlier mentioned strategic choices and will leave nearby future developments to the imagination of scientists.

4.3 Reflection

The transitoriness of energy resources was not discovered yesterday. This fact legitimised this particular research assignment (in terms of studying two different timeframes) and at the same time made it more difficult as well. Major differences between the two studied timeframes have been discussed, such as the end of Cold War and the results of the First Oil Crisis in terms of changes in the energy market. One fundamental consideration however still stands: structurally Europe has not been able to diminish its energy dependence on nations with unstable governments that are mostly located in unstable regions. Therefore it must be concluded that as long as we want our economies to flourish we will be structurally dependent on these nations. In the energy field it seems many things changed while at the same time nothing really has.

The theoretical contributions used for analysis of the two different timeframes in this debate demonstrated different mirrors. It has to be mentioned that the used material comprised only a fraction of the full academic reservoir on these theoretical insights. While this immediately questions the completeness of this analysis, it is practically impossible to use three complete theoretical insights within the scope of one Master thesis. The choices have been based on solid motives and are therefore defendable. Furthermore it is appealing to witness that the different theories provide such different outcomes in this debate. Knorr's version of political economy was rather clear on the negative character of the future scenario, in which conflict would be unavoidable since energy resources were getting scarcer and the number of consumers was growing rapidly. From this perspective the single horsehair will snap on short notice. Interdependence theory on the other hand questioned the fact whether a conflict over energy resources as such is possible. More fundamentally the topic of this research would thus be characterised: there is no single horsehair. Finally securitisation theory offered two options. There either is an existential threat or there is not. This implies that the European Union will develop a combined energy policy in which this matter is dealt with, or that European leaders need to rethink how to address an existential threat such as the transitoriness of energy resources.

The results of the research are therefore conflicting. It has to be assessed which theory is more valuable and in fact this is depending on many variables. There is proof of interdependence theoretical assumption that increasing interdependence diminishes the chances of escalating conflict. Although nations on a global scale are more involved with each other than ever, mechanisms of different origin somehow prevent conflicts from escalating. On the other hand the concept of born monopolies proved valuable. These however are assumed to be breeding ground for future conflict and given the enormous importance of energy resources for our economic systems, they might well prove to be. It must be stipulated however, that they did not prove this so far, despite repeated threats of some nations. Securitisation theory then provided an interesting case for policy makers. Are energy resources or Europe's lack of them an existential threat or not? As with political economy the negative scenario might well prove to become reality. If this is true, given the current status of the European Union and its (im)possibilities, European policy makers might hold losing cards.

In the end it seems fair to conclude that the theoretical perspectives as such are not sufficient to provide lasting answers in the complex matter of energy resources. It is too easy to point at the past and state that growing interdependence diminished the number of escalating conflict and will do so in the future, hence excluding possibilities for future conflict. In the end there

is no point denying the transitoriness of energy resources! On the other hand more negative scenarios are not based on plain facts and are therefore too much predictive and suggestive. Why assume negative developments if these predictions have not become reality during the past three decades? Perhaps several horsehairs can be answered for and diminish the somewhat hysterical tone that some theorists uphold in the debate. Still, even a bunch of horsehairs can snap. The European Union can better be optimally prepared.

4.4 Recommendations

This thesis has provided some interesting material for further study. First rather practical and obvious suggestions are the development of the global energy market. This study already gave some insight in the enormous changeableness of this market. Given the transitoriness of energy resources and the growing number of consuming nations this changeableness seems somewhat guaranteed for the next decades, so studies within this field are bound to be interesting. In addition one can think of more regionally oriented research such as on the development of the European Union energy market or the development of European Union energy policy.

More theoretically oriented issues arose from this thesis as well. It was indicated that different theoretical insights delivered different perceptions of the current developments on the energy market. Pluralist interdependence scholars still hold great cards while claiming that growing interdependence will diminish the chances of conflict to actually escalate. In addition they are likely to deny the scenario that conflict over energy resources can escalate. On the other hand some recent events (like the Russian – Ukrainian incident in 2005) are likely to feed more realistic oriented theorists who claim that growing interdependence will develop into a breeding ground for future conflict. These scholars will perhaps label energy resources as a potential field which will prove their right. If this is the case the lack of energy resources can in fact be labelled as an existential threat, thus opening the way for far going measures to secure one's energy resources. It seems terrorist organisations already made this identification, while politicians have not, perhaps for the better. All in all these scenarios and reflections mark an interesting and promising field of study.

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