

# Building a Common European Energy Policy Around a Market-Based Approach

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In a Country not furnished with Mines there are but two ways of growing Rich, either Conquest, or Commerce. By the first the Romans made themselves Masters of the Riches of the World; but I think that in our present circumstances, no Body is vain enough to entertain a Thought of our reaping the Profits of the World with our Swords... Commerce therefore is the only way left to us, either for Riches or Subsistence. (Locke, 1691)

## 1. Introduction

The unequal distribution of the world's natural resources –whether mines of gold and silver in the 17th century, or deposits of oil, gas, and uranium today– is a longstanding problem. John Locke's insistence on the primacy of contract

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over conflict in the debate with his mercantilist contemporaries was as valid then as it is now. In comparative terms, nature has served Europe poorly when it comes to energy resources. In the face of ever-rising demand, the exhaustion of domestic resources and rising import dependency are the logical consequence. The key question pursued in this chapter is how Europe can best respond to such import dependency and how it can progress in constructively engaging its trading partners in order to safeguard European independence and economic growth.<sup>1</sup> In particular, the question is whether Member States of the European Union should, one by one, engage in bilateral negotiations with supplier countries.

In Europe energy questions have also played an important role in the evolution towards an ever-closer union between nation-states. The first common institutions of the six founding members of the European Union were the European Coal and Steel Community (ECSC) in 1951 and the European Atomic Energy Community (Euratom) in 1957. The founding fathers of modern Europe had fully grasped the strategic character of energy supply security. To survive and function, the yet-to-be-created European Union would have to be first and foremost an energy union. Since the 1950s, Europe has clearly made great strides towards closer integration, most importantly perhaps through the creation of a single market for goods and services. Paradoxically, the integration of energy policies has not made much progress since then, except for the launch of a hugely problematic process of liberalizing electricity and gas markets, defined by technical, legal, and financial rather than political questions. Even the international coordination concerning coal, steel, and nuclear issues has largely withered away. National choices in the energy mix are today largely made without consultations among European partners; common projects have a difficult time taking off; and the EU Member States struggle to find a common voice when talking to its key partners in international energy affairs.

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1. Unless otherwise indicated, the terms "Europe" and "EU" refer to the EU-25, which includes the following Member States: Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom.

### **1.1. A difficult European energy supply situation...**

The European energy situation is characterized by growing demand, notably for gas and electricity, and slowly tightening supplies in several facets of the supply spectrum. Efforts to assure safe and affordable energy supplies in Europe are at a crossroads. While there is no immediate crisis in the energy sector, a number of short-term and long-term pressures are building up and are cause for concern.

Indigenous European oil and gas resources, which never were abundant, are dwindling and will be largely depleted by the end of the decade. Coal, Europe's most abundant resource, presents problems of acceptability due to its environmental impact. While alternative supplies are physically available, there are only a limited number of suppliers, frequently in geopolitically unstable regions (e.g., the Middle East, North Africa, Central Asia), which complicates the European energy equation. The rapid growth of India and China, with 2.3 billion people between them, and the concomitant increase in energy demand are further causes for concern. Observers were also startled by China's dynamism in securing physical energy supplies, in particular from African countries.

In addition, the world has just been through a three-year rise in energy prices, during which the price of crude oil tripled and the prices of gas, electricity and coal all doubled. While higher prices due to increased resource scarcity do not necessarily equate with a decline in the security of physical energy supplies, the sudden and massive increase in energy prices has worried policymakers and the public alike. Russia's decision briefly to suspend gas deliveries to Ukraine in winter 2005-2006 and to suspend oil deliveries to Byelorussia in winter 2006-2007, both vital transit countries, has further highlighted Europe's dependence on energy imports. Last but not least, the accession of Central and Eastern European countries to the EU in 2004 has revealed conflicts of interest in energy policy along historical fault-lines. While it is unlikely that any one European country could continue in splendid isolation in the case of a serious interruption of supply, a more coherent and explicit framework for European cooperation in case of emergency is needed to calm sometimes overblown concerns.

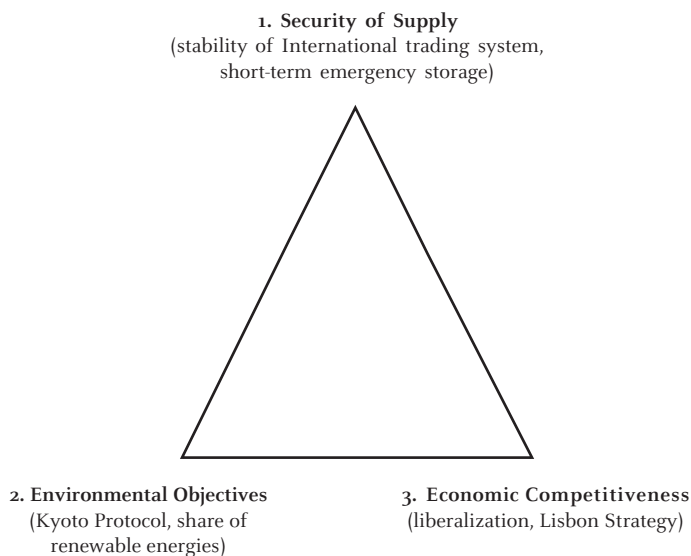
## **1.2. ...is made worse by the inability of decision-makers to develop a coherent energy policy**

The inability of policymakers in the European Commission and within national governments to decide between competing objectives adds to the difficulties Europe is facing. Reducing greenhouse gas emissions, limiting subsidies, decreasing import dependence, phasing out nuclear power, augmenting the use of renewable energies, liberalizing energy markets, increasing economic competitiveness, etc. –the wish-list of energy policy objectives is very long, indeed. Crucially, European efforts to improve energy security are hampered by the lack of an internal consensus about the trade-offs between competing policy objectives.

## **1.3. The Triangle of European Energy Decision-Making**

Consider, for instance, the share of gas in European energy consumption (see fig. 1). Favored over coal for environmental reasons and over nuclear due to cost, natural gas satisfies objectives 2 (environment) and 3 (competitiveness). Unsurprisingly, its share in total primary energy supply is expected to rise from 23% in 2004 to 30% in 2030 (IEA, 2006). Increased natural gas consumption, however, means increased import dependency and thus contradicts objective 1 (security of supply). The inability to define lasting trade-offs between the different objectives implies continuing policy drift.

Nowhere is the old adage that “crisis spells opportunity” more applicable, however, than in the case of European energy supply security. The EC’s Green Papers on energy security, *Towards a European Strategy for the Security of Energy Supply* (EC, 2000; 2006), have sparked a wide-ranging debate. While the debate is far from concluded, there are initial indications of the main orientations that will guide European energy policy-making in the coming years. Political commentators and the public have begun to voice concern about the resulting policy vacuum and are ready to contemplate stronger intra-European coordination in energy matters and a more forceful voice for the Union abroad.

**Figure 1. The Triangle of European Energy Decision-Making**

Source: Jan H. Keppeler.

Energy matters played an important role in the birth of modern Europe. The European Coal and Steel Community (ECSC) and European Atomic Energy Community (Euratom) were the precursors of the EU. However, to reminisce in this way might do more harm than good. In the modern energy world, there is no place for visions of manifest destiny. The current situation does not require inward-looking, mutual subsidization but the acceptance of global interdependence and the creation of structures that allow global energy markets to function. The energy security debate thus inserts itself into the wider debate about the nature and the course of the EU. It could even be a catalyst for an updated European policy identity. Rightly addressed, Europe and the EU have much to gain from the current debate about energy security.

## 2. The Energy Security Situation in Europe

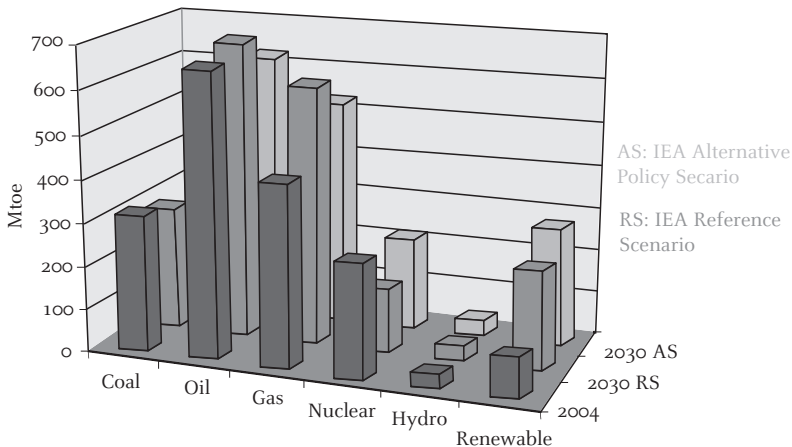
The EU-25 relies heavily on fossil fuels for its energy consumption. In 2004, coal constituted roughly 18% of total primary energy supply (TPES), oil 37%, gas 24%, and nuclear

and renewable energies about 20%. From the perspective of security of supply, Europe's heavy reliance on oil and gas poses the most immediate challenge, of course. Europe currently imports about 80% of the oil and about 60% of the gas it consumes. High growth rates in the use of renewable energies of almost 5% per year (compared to growth rates for total TPES of 0.5% in the reference scenario and of less than 0.2% in the more proactive alternative scenario) will not fundamentally change that picture since their base is too low.

Given the historic inelasticity of energy demand in the transport sector, any impulses for significant structural change in Europe's energy sector can only come from the power generation sector. Coal and nuclear each represented 31% of total electricity generation, gas 19%, hydro 10%, renewable energies 5%, and oil 4%. Expectations are that the demand for gas and renewable energies will grow rapidly (at 3% and 6% per year, respectively, in a market growing at 1% per year) to reach 32% and 19%, respectively, of total electricity generation in 2030 in the "policy as usual" reference scenario. This coincides with the decline in shares of coal and nuclear.

Coal-fired power generation, particularly *new* coal plants, will be progressively priced out of the market by higher prices

**Figure 2. EU Total Primary Energy Supply, 2004 and 2030**



Source: IEA (2006).

for CO<sub>2</sub>-emissions. Nuclear energy, on the other hand, is hampered by political commitments –most notably in Germany and in Sweden– to phase out nuclear power as well as by the price risk that private investors in technologies with high fixed costs (such as nuclear) incur in liberalized electricity markets. While gas-fired power generation, which is a technology with low fixed costs, does not have such disadvantages, it does, of course, pose specific questions concerning the security of supply (see below). Gas is thus the variable of adjustment when distinguishing the “reference scenario” from the “alternative policy scenario.” Higher gas prices due to political uncertainty and/or fiscal policy, combined with more aggressive efforts to improve the efficiency of power consumption and the competitiveness of renewable energies, might lead to much lower growth of the electricity market (where prices are set at the margin by the marginal fuel for peak-load demand, that is, gas). In a smaller market such as this, gas might stay at a share of 20%, overtaken even by renewable energies with 24%, while a slower phase-out of nuclear power would essentially make up the rest.

In summary, however, the modeling results of the International Energy Agency (IEA), which to some extent reflect a consensus estimate of energy experts, make for sobering reading when applied to the issue of security of energy supply. Even assuming the more optimistic “alternative policy scenario,” Europe will consume more gas and an equivalent amount of oil in 2030 than it does today. There are three key reasons why the outlook for European energy does not look very different from the present:

1. The intractable issue of oil demand for private transport, where modest technical improvements are unable to compensate for the rising use of ever-heavier personal vehicles.

2. The fast rise of gas, around 1% per year, in both scenarios due to the attractive economics of combined cycle gas turbines (CCGT) in liberalized (and rapidly growing) electricity markets. This fact is linked to the decision of several European countries to phase out nuclear power.

3. The inability of European policymakers to agree on an effective energy policy that would need to be built around two

principles: (a) a commitment to liquid and transparent global energy markets, and (b) strengthening the commitment to energy efficiency and renewable energies with a pricing strategy that fully incorporates impacts on the environment as well as the economic effects of the risks of physical disruptions and excessive volatility.

It would be unfair, however, to say that procrastination is the only hallmark of the European energy situation. A picture of essentially stable, or slightly increasing, *total* energy consumption hides another picture, one in which economic growth constantly plays catch-up with relative improvements in the efficiency of energy consumption. Per unit of GDP, Europe uses only 60% of the energy today that it used in 1970. Its energy intensity is still 10% below that of the OECD average, although the distance between the high-intensity countries of North America has shrunk both in absolute and in relative terms.

## **2.1. The Oil Sector**

Directly or indirectly, recent concerns about the security of energy supplies have also been prompted by the rapid rise of oil prices during the last three years. Global oil prices rose from a historic low of US\$10 per barrel (152 liters) of oil in 1998 to US\$20-30 in the period 2000 to 2003, a price level that was close to OPEC's announced target price of US\$25-35 and that experts widely considered to be sustainable. The three-fold increase in the price to a historic high of US\$78 in spring 2006 caught markets, including OPEC, by surprise. Oil is still the world's single most important commodity. Its price is to some extent an indicator of the price of energy in general. The rise in oil prices also drove a global boom in commodity prices that is only now coming to a halt. Several factors contributed to its massive increase:

- The inability of producers to increase supply: The oil industry has investment cycles that can span one or two decades; it was unable to respond quickly to any increase in price.

- The inelasticity of oil demand in the short run: High in energy content, easily transportable and usable, oil is a vital



ingredient of modern economies through the transport vector; while changes in behavior are possible, they take years to be implemented in response to price changes.

– Political uncertainties surrounding key supplier countries (including Iran, Iraq, Venezuela, Nigeria, and to a lesser extent Russia) added a risk premium of up to US\$20 per barrel; while the bulk of oil was still flowing freely, prices are set at the margin, which means that in a tight market the risk of a single country unable fully to service its commitments pushes up prices.

– The fast growth of Asian demand for oil: Economic growth of 5-10% per year was coupled with a massive one-million-barrel-per-day increase in demand from China, which was rebuilding its strategic petroleum reserves.<sup>2</sup> Of course, Asian demand was also a key factor in sustaining the more general boom in commodities.

– The technical and geological challenges for alternative supplies (such as deep-sea or Arctic deposits or heavy oil sands in Canada and Venezuela) to come on-stream quickly. In some areas, such as Canada, environmental pressures and the inability to find qualified personnel have limited expansion.

While the situation in the oil market is serious but not dramatic, consuming countries cannot relax. In the long run, oil prices will stay high to balance increasing global demand with ever more difficult and more costly production conditions. An indicative number for marginal production costs at current demand levels might be US\$35 per barrel (average costs in countries such as Saudi Arabia can be much lower). Add an uncertainty premium of US\$10-20 due to political tensions and US\$50 all of a sudden look like a reasonable floor for oil prices. Most important, however, is that even with a well-working global oil market, oil supplies constitute not only a price issue but also an issue concerning the continuity of physical flows. The Drushba incident was a potent reminder in this respect.

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2. China's strategic oil reserves, with a storage of roughly 20 days of demand, are still far below the level of the stored reserves of most industrialized nations. Members of the International Energy Agency (which include the EU countries, excepting Bulgaria, Romania, and the Baltic States), for instance, have a legal obligation to provide for 90 days of storage.

**Table 1. Inter-Area Oil Movements in 2005 (thousand barrels per day)**

| From                 | To            |              |              |               |               | Total exports |
|----------------------|---------------|--------------|--------------|---------------|---------------|---------------|
|                      | Europe        | China        | Japan        | USA           | Rest of world |               |
| Former Soviet Union  | 5,811         | 398          | 47           | 473           | 347           | 7,076         |
| Middle East          | 3,144         | 1,360        | 4,269        | 2,345         | 8,703         | 19,821        |
| Africa               | 2,681         | 773          | 142          | 2,490         | 1,608         | 7,694         |
| Rest of world        | 1,625         | 853          | 767          | 8,217         | 3,853         | 15,315        |
| <b>Total imports</b> | <b>13,261</b> | <b>3,384</b> | <b>5,225</b> | <b>13,525</b> | <b>14,511</b> | <b>49,906</b> |

Source: BP (2006).

However, even in this respect Europe is not too badly prepared given that its oil supplies are far better diversified than those of other major importing regions (see table 1). This is different from the gas sector, which poses a more immediate challenge to the security of European energy supplies, the greater relative importance of oil supplies notwithstanding.

In addition, efforts are underway to diversify oil supplies further. However, one of the most important oil infrastructure projects of the recent decade, the 1,760 km BTC oil pipeline between Baku (Azerbaijan), Tbilisi (Georgia), and Ceyhan (Turkey), was undertaken without any official involvement of the European Union or its Member States despite the fact that European companies –BP (31% and project leader), ENI (5%), and Total (5%)– hold major stakes in the project. The one-million-barrel-per-day BTC oil pipeline that opened in May 2006 is part of the strategy of diversifying the European oil supply routes. One estimate says that up to one-quarter of global incremental oil supplies of recent years will flow through BTC (Starr and Cornell, 2005: 39).

## **2.2. The Gas Sector**

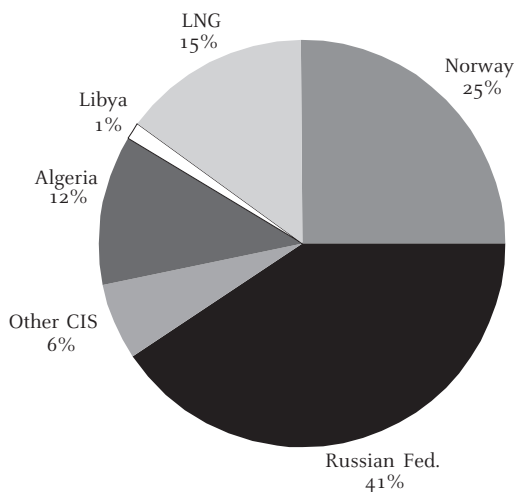
The gas sector is currently the most vulnerable part of the European energy sector. Contrary to oil or total energy, the intensity of Europe's economy has risen since the 1970s.

Europeans today use more gas per unit of GDP than 30 years ago. While Europe shares growing gas intensity with the industrialized countries of Asia (Japan and South Korea), its absolute share per unit of GDP is almost three times as high. Such rising intensity of consumption is highly unusual in the energy sector and it can only be explained by the conjunction of three factors: (1) the maturity of the gas transport system, (2) the development of the combined-cycle gas turbine, and (3) the liberalization of European electricity markets. However, despite the good economic reasons for adopting gas-based power production, growing gas intensity also means increased vulnerability to physical disruptions of supplies and increased economic vulnerability to changes in the price of gas.

Europe's gas is increasingly imported. Total gas imports of the EU's 27 Member States from outside the EU area (i.e., net of intra-European trade-flows) amount to 317 billion cubic meters (bcm), 41% of which come from Russia. This is certainly a large proportion and an indicator of a certain degree of dependence. However, nowhere is the old adage that dependence is mutual truer than in the current gas trade between Russia and the EU. The 128 bcm that Russia exports each year to Europe constitute the bulk of Russia's total exports of 151 bcm. In addition, it constitutes by far the most profitable part of Russia's enormous annual production of 598 bcm, which is fueled by domestic consumption that is subsidized with prices at around one-quarter of world prices.

During the past ten years, gas prices have also more than tripled. They roughly doubled in the past three years, before easing in the second half of 2006. Quite rightly, politicians and the general public were more concerned about rising electricity prices (of which rising gas prices are an essential part) than about rising oil prices. Oil intensity has been steadily declining, playing a far smaller role in government and consumer budgets, the trade balance, and inflationary pressures. The opposite happened in the gas market. It is completely reasonable for politicians and consumers to focus their policy efforts on this point.

Currently Europe is still producing 42% of its gas consumption domestically. In addition, the least problematic

**Figure 3. Provenance of European Union Gas Imports in 2005**

Source: BP (2006).

source of supplies –globally diversified LNG (liquefied natural gas) trade– already constitutes 15% of imports and is rising fast. It is estimated that European LNG imports will rise by 7.5% per year, compared to 5.1% for imports through pipelines and 2.1% for the growth of total demand (Suez, 2006: 36). Global LNG trade will be fuelled by Qatar’s massive “North Field,” which contains an estimated 900 trillion cubic meters, constituting 14% of proven global reserves. The increase in LNG trade is usually seen as a positive contribution to the diversification and the security of European energy supplies. This is by and large correct. However, the establishment of a truly global marketplace for gas can play both ways. It allows diversification for both suppliers and consumers –witness the discussion to export LNG to the United States from Russia’s large Shtokman Field, on which the Russian supplies to Europe will significantly depend.

European consumers will be in competition not only with Asian and American consumers but also with Russia’s domestic market. In the long run, however, the emerging LNG market contributes to the necessary diversification of both consumers *and* suppliers. The sometimes controversial discus-

sions about different pipeline projects, such as North Stream, South Stream, or Nabucco, have to be seen in the same light. A case in point is the Turkmen strategy to construct gas pipelines to the West, the East, and the South. Every commercially viable pipeline or LNG terminal should be built. In the long run, the diversification and substitutability of both supply sources and retail markets can only contribute to the de-politicization of the gas market, with benefits both for energy markets and for politics.

### **3. Key Developments Likely to Impact on EU Security of Energy Supply**

In the following we shall briefly sketch developments in three key regions –Russia, OPEC and the Middle East, and the United States– which are likely to affect the security of European energy supplies in the medium term.

#### ***3.1. Russia: Merits and Limits of a Special Relationship***

Russia is Europe's main supplier of both oil and gas. The EU-Russia relationship is thus of great importance to European energy security. The decisive question, however, is whether this relationship (significant though it is) should insert itself into a global commercial logic, in which each side is free to look for the best deal available, or whether it should link the two partners in a binding long-term agreement. While Russia is Europe's neighbor and deserves every attention as well as all technical and institutional help it is willing to accept, the energy relationship between the two blocs should be have a commercial rather than a political basis.

The reasons for this are not necessarily the obvious ones. The dispute between Russia and Ukraine in winter 2005-2006, unsettling as it was on a symbolic level, led only to a minor shortfall of 100 million tons, which corresponds to a difference in demand due to a temperature change of 2°C on a single day (Ladoucette, 2006: 4). Those who prefer to see the interruption (together with the three-day shut-off of the Druzhba pipeline in January 2007) as a sign of decreased

reliability should consider that the current dependence is mutual. Gas exports to Europe constitute 70% of Gazprom's revenues (Finon and Locatelli, 2006: 8).

The real reason for advocating a market-based approach to energy relations with Russia is that the energy world is changing. By the end of the decade, Russia will be able to export gas to East Asia, and Europe will be able to import gas from Central Asia, Iran, and Iraq. New centers of supply and demand have emerged that must be integrated into the world economy. The fast-rising share of LNG transported by tankers, in particular due to the discovery and exploitation of the vast Qatari Pars Field, further transforms the gas market from a logic of long-term bilateral relationships to a logic of multilateral market relations.

The problem is that Russia's production is not increasing fast enough. Gas prices (including VAT) in Russia for both residential and non-residential consumers vary between US\$35 and US\$70 per 1,000 cubic meters, depending on the administrative zone. Compared to the current world price of about US\$235 per 1,000 cubic meters, this amounts to a subsidization rate of between 70% and 85%. Run-away domestic gas consumption is Russia's (and with it Europe's) biggest energy problem today. Europe should assist Russia with policy and technical advice to solve this problem.

Clearly, the perceived insecurity of property rights –whatever its legal, political, and historical legitimacy– did not encourage long-term investment. This weighs particularly on new exploration, which is now short of production replacement levels. An additional issue is the new tax system introduced in 2002, which taxes physical production rather than profits. While this makes it possible to limit the extent of tax evasion through skewed transfer pricing, it also limits companies' incentives to invest in less profitable production in lower margin fields, thus restricting supplies (Finon and Locatelli, 2006: 23-24).

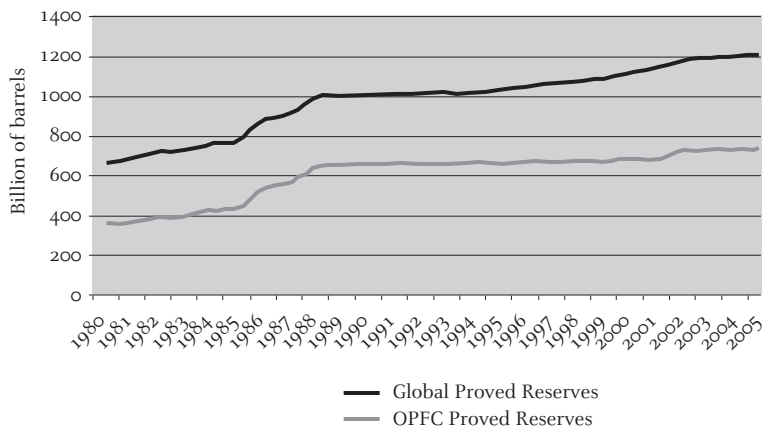
What happens in Russia remains important. Much has been made of the future supplier role of countries surrounding the Caspian Sea as alternatives to Russia. One should not

forget that Russia still produces three-quarters of total oil output and exports of the Community of Independent States (CIS), with Kazakhstan making up most of the rest. Russia is an important player in the world of gas and oil, but its power to determine prices should not be overestimated. It is very limited in the oil sector and far from absolute in the gas sector. Its transition towards basing decisions on commercial rather than political logic should be encouraged. In the long run, the question of foreign direct investment is a more important issue (for both Russia and Europe) than the issue of third-party access to gas pipelines that has made headlines. To give way on the latter and to ask for solid guarantees on the former might be the EU's best negotiating stance in order to improve the security of its energy supplies.

### **3.2. OPEC: Still the Center of the Oil World**

First of all, there is still plenty of oil in the ground. Second, these resources are concentrated in a very small number of countries. In fact, on the face of it OPEC looks stronger than ever. For three years, oil prices have been above US\$50 for a barrel of oil. At the beginning of 2007, Angola became the 12th member of the cartel, which now supplies 52% of the oil imports to developed countries –the highest share in five years. Experts widely agree that OPEC's share will rise rather than decline in coming years. In figure 4 below, one can see that for 25 years, most new discoveries of oil reserves have been in OPEC countries.

Looking closer, however, another picture emerges. Prices are set at the margin, which means that the cost of the last, additional ton produced determines price. If countries are producing at full capacity (which OPEC has done in recent years), they no longer have any influence over prices. The increases in oil prices over the past three years happened entirely independently of any OPEC action, which agreed on production cuts only in the second half of 2006. The organization initially had even feared a world economic slowdown due to higher oil prices and adjusted its original range of US\$25-35 per barrel only several months after the price

**Figure 4. The End of the Oil Age: Not Now, Maybe Later**

Source: BP (2006).

changes had occurred. The price increases were due to the ending of a 25-year investment cycle that coincided with a strong rise in Asian demand. This pushed global oil production to its capacity limit. Due to the addition of a US\$10-20 risk premium due to political and military instability, oil prices reached US\$78 per barrel without OPEC ministers having to move as much as a finger. Much the same mechanisms have been on display during the past twelve months with oil reaching its historical high of US\$ 135 per barrel in May 2008.

Despite recent oil price spikes (or rather because of them), however, new supplies are coming on stream. Experts estimate the amount of new production capacity currently being built between three and four million barrels per day. That is a substantial increase, easily capable of making a difference. OPEC is well aware of this fact. Its decision to cut production by 500,000 barrels a day (about 2% of its total production), beginning in February 2007, is the logical response. This does not necessarily mean that OPEC's pricing power will be restored immediately. OPEC countries have not been very dynamic in expanding oil production, partly because of their wariness to attract foreign direct investment and the technological and geological expertise that comes with it. Other players, such as the countries of the



**Table 2. Proven Oil Reserves in 2005**

|                                    | Billion barrels of oil | Percent of world total |
|------------------------------------|------------------------|------------------------|
| <b>EU Countries of which</b>       | <b>6.0</b>             | <b>0.5</b>             |
| Denmark                            | 1.3                    | 0.1                    |
| Italy                              | 0.7                    | 0.1                    |
| United Kingdom                     | 4.0                    | 0.3                    |
| <b>Europe and Eurasia of which</b> | <b>140.5</b>           | <b>11.7</b>            |
| Kazakhstan                         | 39.6                   | 3.3                    |
| Norway                             | 9.7                    | 0.8                    |
| Russia                             | 74.4                   | 6.2                    |
| <b>Middle East of which</b>        | <b>742.7</b>           | <b>61.9</b>            |
| Iran                               | 137.5                  | 11.5                   |
| Iraq                               | 115                    | 9.6                    |
| Kuwait                             | 101.5                  | 8.5                    |
| Saudi Arabia                       | 264.2                  | 22.0                   |
| United Arab Emirates               | 97.8                   | 8.1                    |
| <b>Africa of which</b>             | <b>114.3</b>           | <b>9.5</b>             |
| Algeria                            | 12.2                   | 1.0                    |
| Libya                              | 39.1                   | 3.3                    |
| Nigeria                            | 35.9                   | 3.0                    |
| <b>North America of which</b>      | <b>58.5</b>            | <b>5</b>               |
| Canada                             | 16.5                   | 1.4                    |
| Mexico                             | 13.7                   | 1.1                    |
| United States                      | 29.3                   | 2.4                    |
| <b>South America of which</b>      | <b>103.5</b>           | <b>8.6</b>             |
| Brazil                             | 11.8                   | 1.0                    |
| Venezuela                          | 79.7                   | 6.6                    |
| <b>Asia Pacific of which</b>       | <b>40.2</b>            | <b>3.4</b>             |
| China                              | 16.0                   | 1.3                    |
| <b>Total World</b>                 | <b>1200.7</b>          | <b>100</b>             |

Source: BP (2006).

Caspian Sea, East Africa, Mexico, and Canada, have stolen some of the limelight recently. Nevertheless, geology is firmly in OPEC's favor. Its future role will depend, however, on its ability to cooperate with the oil and gas companies of the developed world in order to unlock the energy resources nature has so abundantly provided its member countries.

### **3.3. *The United States: Big Boats Turn Slowly***

In recent years the federal government of the United States has issued a series of high-profile announcements heralding major changes in US energy policy. While announcing the "hydrogen economy," the "alternative fuels initiative," and tackling the country's "addiction to oil" have failed to make a lasting impact on the ground, they are nevertheless testimony to the fact that energy is high on the US government's list of priorities.

For the time being, the US is still the world's largest energy consumer (and carbon emitter), its biggest energy producer, and, incidentally, the world's third greatest oil producer and its greatest importer. With 5% of the world's population, it produces 20% of global energy resources and consumes one-quarter of them with a corresponding share of greenhouse gas emissions (see table 3 below). Mechanically, the US economy is thus much more energy-intensive than the comparable economies of Europe, Japan, or China. While size, population density, and climate can explain part of the difference, the main reason is price. Nominally, taxed end-use prices for energy in the US –most notably for oil products such as gasoline– are one-tenth of those in European countries.

While the US government has generously funded research for new technologies, such as biofuels, carbon sequestration, and "clean coal" technologies, and while the 2005 Energy Act contains substantial subsidies for a new generation of nuclear power plants, the government has so far fiercely resisted any attempts to use fiscal measures. Its refusal to sign the Kyoto Protocol, or to commit itself to limiting greenhouse gas emissions by pricing them through a carbon market equivalent to the European Emission Trading Scheme (ETS), are both part of the same policy stance.

**Table 3. Global Blocs in Comparison**

|                           | USA   | China | Europe |
|---------------------------|-------|-------|--------|
| Population                | 290   | 1,280 | 470    |
| Share of global           | 5%    | 21%   | 7%     |
| TPES (Mtoe)               | 2,300 | 1,180 | 1,080  |
| Mtoe/capita               | 8     | 1     | 4      |
| No. of vehicles (million) | 220   | 13    | 229    |
| Oil consumption (Mbd)     | 22    | 5     | 13     |
| Oil import ratio          | 5%    | 50%   | 77%    |

Source: CGEMP (2006).

Despite the discouraging slowness of the US government in following up its grand announcements with decisive action, it would be wrong to describe the US as at a standstill. The initiative on new nuclear energy has already been mentioned. It is seconded by the decision to create a deposit for the long-term storage of spent nuclear fuels at Yucca Mountain, Nevada. This puts the United States ahead of almost all other industrial nations (exceptions being Finland and Sweden) in finding a solution to the vexing issue of nuclear waste. Regional initiatives (California and the Northeastern States), a series of corporate leaders (most notably in the financial industry), public opinion (influenced by Al Gore's movie, *An Inconvenient Truth*), and political initiatives (the narrowly defeated McCain-Lieberman Act) all contribute to increasing pressure for action on climate change. It is likely that the US will see a federal limit on greenhouse gas emissions before the end of George Bush's second term. At the G8 Summit on June 6-8, 2007, in Heiligendamm, the United States committed itself for the first time to take climate change seriously.

Big boats turn slowly and in energy terms the United States is a very big boat, indeed. Nevertheless, there are a number of concurrent signals that a consensus is forming that cheap, unlimited energy consumption is no longer as central to today's "American way of life" as it was in the past. If this reading is correct and the different tendencies gather force,

this would have an enormous impact on global energy markets in the medium term.

#### **4. A Multilateral Framework for European Energy Supplies**

While others are moving, Europe seems to be standing still –leaving aside for the moment its admittedly important activism in the debate on climate change, to which we shall return. What are Europe’s choices in this situation? Continue with a proliferation of bilateral initiatives between different Member States and individual supplier countries, be they Russia, Iran, or Algeria? Or develop a truly common external energy policy consistent with Europe’s fundamental commitment to open and transparent markets?

Posed in this way, the answer seems obvious. So far, however, there has been precious little effort from the European side to work towards the improvement of the multilateral energy trading system and actively to promote free, liquid, and transparent international energy markets. It seems that the imagination of energy decision-makers is currently limited by the ambition to repeat on a larger European scale the mistakes that are committed again and again by its Member States. The oft-repeated mantra that in energy matters “Europe needs to speak with one voice” is only used in the sense that Europe should better leverage its bargaining power by creating bilateral rather than asymmetrical monopolies. The notion of a single European buyer for gas smacks of the corporatist ideal to impose the “just price” by sheer might of size and political will.

Such an approach would put European energy consumers on the tenterhooks of the vagaries of intra-European horse-trading and external political relations. Since it will be an energy importing region for decades to come, Europe needs open and transparent global energy markets. Its energy companies are large and competent enough to hold their own in the global marketplace. However, this marketplace has so far evolved in a somewhat haphazard manner. Pricing arrangements, contract modalities, the structure of production-sharing agreements, the interaction of physical and financial markets, etc. –global energy markets do not even have a common

language, much less a common set of procedures, and even less a common set of rules. The time seems ripe (for technical, political, and commercial reasons) to begin working on the governance of global energy markets. It is in this direction that Europe's external energy policy must evolve. If Europe as a whole insists on repeating in its external energy policy the mistakes of its Member States, then the absence of a European energy policy might be the lesser of two evils.

Of course, there is no harm in bilaterally acknowledging mutual interdependence between supplier and consumer countries and in agreeing on common projects. However, such bilateral cooperation must not stand in the way of the workings of global energy markets, in which each country and each company may act as an independent profit-maximizer. Energy will not be "just a commodity" for many years to come. Yet the more normal it is, the more beneficial it will be for all involved. Europe should resist resource nationalism. However, it should do so on economic, not moral, grounds. An effort has to be made to explain that retreating into exclusive bilateral agreements constitutes a sub-optimal solution for both exporting and importing countries. Fortunately, resource nationalism is much less virulent in practice than in rhetoric. Most exporters quickly realize that gaining revenues by exporting their resources is still the best strategy to promote their national interests. In the long run, economic logic naturally wins.

Europe should finally acknowledge the limits of bilateralism and "neighborhood policies" that now reach as far as the western border of China.<sup>3</sup> The new Europe requires a more

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3. Generalized bilateral initiatives (as opposed to cooperation on concrete projects) are of limited help at best and can be a distraction and a drain on scarce resources. The number of European "energy dialogs" is currently proliferating without tangible results. Other than the dialogue with Russia, the European Commission entertains bilateral initiatives with almost every energy-producing country in the world. *An Energy Policy for Europe* (EC, 2007), a synthetic policy document for high-level decision-makers, mentions Memoranda of Understanding with Azerbaijan, Kazakhstan, Turkmenistan, and Uzbekistan, a Communication to the Black Sea Council, contacts with OPEC, the Gulf Cooperation Council, Latin America and the Caribbean, and a special Africa-Europe energy partnership. The problem, of course, is *not* that these initiatives exist as part of normal international relations. Rather, the problem is that these routine diplomatic exercises are currently at the heart of the European policy to safeguard energy supplies, an objective they simply cannot achieve.

open and more realistic approach. Important as it is, Europe will not sway on its own countries such as Russia or the countries of Central Asia one way or another. At the same time, Europe should continue to offer technological, financial, and institutional aid freely. Frequently, exporting countries—especially smaller ones—are in dire need of it. The role of such help is not to advance “influence” but to stabilize vital trading partners.

Agreeing on a commitment to an open, market-driven approach would lay the basis for a more secure energy world in the future by rationalizing an energy debate too often clouded by superficial pronouncements of “shared responsibilities.” While there are shared responsibilities for securing international energy markets, ensuring its position in international market is a matter of each independent actor: Russian gas exports to Asia are as legitimate as European gas imports from the Middle East. The introduction of moral categories into energy decision-making has only contributed to a deterioration of relations. A multilateral trading system is by far the most likely way to produce benefits for producers and consumers. Partners in the process securing and strengthening the international energy trading system must be the United States, China, Russia, and Saudi Arabia.

Following a phase of excessive euphoria vis-à-vis special relationships, European policymakers are now fortunately rediscovering the benefits of multilateral action. Five key elements in this process are:

1. Continued involvement in multilateral organizations, such as the International Energy Agency (IEA), the World Bank, the United Nations Framework Convention on Climate Change (UNFCCC), and the World Trade Organization (WTO). The EC should also press for a global summit on the multilateral energy trading system.

2. Europe’s leadership in the Kyoto process and the creation of the European Emission Trading Scheme (ETS) for CO<sub>2</sub> emissions is one of the EU’s few policy successes in the energy field in recent years, and can contribute massively to decarbonizing the EU economy further.

3. Continuing improvement of the conditions for private investment in supplier countries. The European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD) need to work towards the legal and technical infrastructures to enable private investment. This is a task, however, that can only be pursued in cooperation with other major countries, most notably the United States, Saudi Arabia, Russia, and China.

4. Europe needs to stay involved in the process of the Energy Charter Treaty (ECT). Its focus, however, should switch from an emphasis on “third-party access” to clarifying the conditions for investment.

5. EU participation in multilateral technical initiatives, such as the World Bank’s Global Gas Flaring Reduction Partnership, the Extractive Industries Transparency Initiative, the Financial Action Task Force (FATF), as well as broader adoption by EU companies and banking institutions of the *Equator Principles*, is certainly useful.

Perhaps most important is the possibility that energy will be included in the discussions under the auspices of the WTO once the Doha Round –difficult as it is– is concluded. In any case, as far as external policies are concerned, any improvement in the situation of European energy supplies will depend on multilateral approaches.

## 5. Conclusion

The European energy supply situation gives reason for concern but is currently not in crisis. Investment remains a key issue. Policy uncertainty adds to a structural reluctance of operators to commit to new investment, which raises questions about the adequacy of supply. In the electricity market, much of recent investment has therefore been in combined-cycle gas turbines (CCGT), whose low fixed costs are appreciated by risk-averse investors. In response, European gas consumption has increased strongly, which has raised questions about the extent to which Russia can develop the necessary capacity to service future increases in European gas

demand while at the same time developing its Asian markets and supplying its fast-growing domestic market.

Key to ensuring the security of energy supplies is that Europe manages to formulate coherent policies in the interaction between its objectives of market liberalization, environmental quality, and security of energy supplies. In nearly all permutations, this will require real energy prices to stay high for the foreseeable future. It will also imply a more pragmatic approach to electricity market liberalization, paying more attention to incentives for investment, in particular by creating less volatile market conditions.

As far as Europe's external energy policy is concerned, the choice is between a defensive and a progressive attitude. The defensive attitude implies looking for opportunities for import substitution wherever possible (at taxpayers' expense if need be), looking for bilateral "guarantees" for preferential treatment (particularly in times of crisis), and pooling European negotiating power wherever possible. The progressive attitude, on the other hand, implies embracing the global energy marketplace by trying to create the structures that give both suppliers and consumers the confidence to go forward to maximize joint benefits. The greatest risk on both the supply and the demand side is uncertainty. Opacity, non-transparency, and the mingling of commercial with political considerations are thus the greatest obstacles to the security of European energy supplies.

Europe's energy supply security requires the stability of the global multilateral energy trading system. Accepting and organizing the international division of labor in this field is the best way to realize the full benefits from nature's riches for producers and consumers alike. This implies keeping questions concerned with the organization of energy markets, as much as possible, separate from political considerations. A number of encouraging initiatives in this direction have been mentioned. However, they require a much more forceful commitment to multilateral rather than to bilateral approaches, and more creativity in searching for innovative policy solutions in a rapidly changing energy world.



Such a market-based approach to the world's suppliers of energy resources is also the best way –possibly the only way– to further the convergence of the national energy policies of the (currently) 27 Member States of the EU. Otherwise, historical relationships –good and bad– with specific supplier countries will always take precedence over common European interests, and the primary objective of safeguarding European energy supplies will be diluted by partial and short-term political considerations. Of course, Europe needs neighborhood policies. But it needs them as part of its efforts to build a network of normal political, diplomatic, social, and cultural relations, and not to extract special deals in return for concessions on other matters or to play one partner off against another. The only criteria in the choice of a supplier should be price and quality of supply. Burdening energy choices with additional considerations is unlikely to improve the European security of supply. But market-based energy choices do need frameworks for negotiation. Creating such frameworks and strengthening existing ones should be the primary orientation of an external European energy policy.

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