COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 13.11.2008
SEC(2008) 2858

COMMISSION STAFF WORKING DOCUMENT

Accompanying document to the

Proposal for a

DIRECTIVE OF THE COUNCIL

imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products

IMPACT ASSESSMENT

{COM(2008) 775}
{SEC(2008) 2859}

COMMISSION STAFF WORKING DOCUMENT

Impact Assessment on the Revision of the Emergency Oil Stock Legislation

Lead DG: DG TREN

Other involved services: ECFIN, ELARG, ENTR, ESTAT, SG

Agenda planning or WP reference: 2008/TREN/001

1. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

1.1. Organisation and timing

This Impact Assessment was produced in the context of the preparation of a legislative proposal on the amendment of the EU emergency oil stock legislation.

The preparation of the Impact Assessment started with some preliminary analyses and consultations in late 2006 and was intensified in spring 2007 after the importance of the subject was confirmed in the conclusions of the 8-9 March European Council which called for "improving oil data transparency and reviewing EU oil supply infrastructures and oil stock mechanisms, complementary to the IEA crisis mechanism, especially with respect to availability in the event of a crisis". The analysis feeding into the Impact Assessment was performed internally by the Commission services, partly with the use of external sources of information and expertise.

1.2. Consultation and expertise

An Inter-Service Group (ISG) was established in December 2006 by the Directorate-General for Energy and Transport (DG TREN) with participation from the Secretariat General and DGs ENTR, ECFIN and ELARG. The ISG met in December 2006, May 2007, September 2007, March 2008, April 2008 and July 2008 for discussions of the scope, of interim analytical results and of draft texts for individual elements of this Impact Assessment report, as well as the consultation document published in April 2008 (see below). Moreover, bilateral consultations with EUROSTAT were undertaken on issues related to reporting, most intensively in late 2007 and early 2008.

In addition to the internal Commission consultative process involving the above mentioned services, the Impact Assessment study drew on consultations with external experts and stakeholders who were consulted throughout the preparation of the work and provided invaluable expertise.

An on-line public consultation was carried out between 22 April and 17 June 2008 to ascertain the views of interested parties on the possible revision of the existing legislation on emergency oil stocks. The consultation was based on a document outlining the key issues in the current regime that the Commission regards as in need of addressing and suggesting possible changes to the current legislation. The annex of the consultation document provided additional details on the characteristics and shortcomings of the current system and the

objectives to be achieved through a possible revision. It also served as the basis of the first chapters of this impact assessment.

The public consultation resulted in a set of reactions and contributions from Member States, industry associations and individual enterprises concerning the proposed changes and the various questions raised in the consultation document. The contributions also proved to be instrumental in developing the impact assessment and the legislative proposal.

Apart from the on-line public consultation, the main platforms for the consultation of stakeholders were the Oil Supply Group and the Commission's Fossil Fuels (also known as Berlin) Forum.

The Oil Supply Group is a consultative body comprising the experts of national administrations dealing with emergency stocks and measures, chaired by the Commission. Although it was set up to facilitate the coordination of practical measures taken or proposed in the context of difficulties arising with regard to the supply of crude oil and petroleum products, its meetings are also used for presenting and discussing energy-related Community initiatives. The Group was consulted during the preparation of the Impact Assessment in its meetings in February 2007, September 2007, December 2007, March 2008 and June 2008. Members of this Group also answered two dedicated questionnaires: one on the composition and availability of emergency oil stocks, the other on the resources used for emergency stockholding in Member States under the current rules. The results of these surveys are referred to throughout the document.

The Fossil Fuels Forum is an annual event which was first convened in October 2005 in Berlin. The membership of the Forum is formed by over 100 representatives of European energy corporations, industry associations, national administrations of Member States, Norway and candidate countries, and members of civil society (non-governmental organisations). The Forum's Security of Supply Working Party has been consulted on the issue throughout the preparation of the Impact Assessment (the Working Party met in March 2007, May 2007, July 2007, September 2007, February 2008 and June 2008)[1].

In addition to the above structured dialogues, Member States, the stakeholder community and external experts were consulted through several specialized ad-hoc consultative events and meetings organized on a bilateral basis between the Commission (DG TREN) and the individual stakeholders and stakeholder groups (e.g. industry associations). These consultations provided unique access to up-to-date industrial expertise and know-how. The International Energy Agency (IEA) also provided a vital source of information and external expertise.

Most stakeholders supported the objectives of the revision spelled out in the consultation document. In particular, efforts to decrease administrative burden, to establish coherent emergency procedures complementary to the IEA and to strengthen compliance by reinforced verification and control received general support. However, the stakeholder community, both Member States and industry, proved to be divided with regard to the proposals aimed at improving stock availability. While some stakeholders insisted that all emergency stocks

1 Further details of this Forum, including the minutes of the working party meetings can be obtained via its dedicated website: http://ec.europa.eu/energy/oil/berlin/index_en.htm.

should be government-owned to ensure maximum availability, others argued that government ownership is not necessary and Member States should be able to adapt their systems to their special circumstances. The majority of stakeholders, even those advocating full government ownership, opposed the idea of a strict physical separation of emergency stocks and commercial stocks. They argued that commingling (storing emergency and commercial stocks in the same facilities or even the same tanks) has clear advantages: it reduces the costs associated with the change/refreshment of products and stocks are located close to industry logistics. However, proper accounting and strict control is necessary to ensure that commingled emergency stocks are not used for commercial purposes. This was an important lesson from the public consultation which was taken into account in the conclusions of the Impact Assessment, in chapter 6.

Finally, the draft of the Impact Assessment was examined by the Commission's Impact Assessment Board which provided useful comments and recommendations for the improvement of the text. As suggested by the Board, additional information was included on the relationship between the EU and IEA emergency oil systems and the added value of the EU system compared to the IEA mechanism (including a new section numbered 2.1.3.). At the request of the Board, the considerations behind Option 3 and its implications were further elaborated in chapter 4 and 5. In addition, the policy options' impacts on reporting were clarified.

2. WHAT IS THE PROBLEM?

2.1. Oil Supply Security in EU Member States

2.1.1. Historical background

The origins of emergency oil stockholding lie in early 20th century Europe[2]. In the second half of the 20th century, oil became the most important fuel in the European energy mix, making the economy crucially dependent on its continuous, reliable and affordable supply. European administrations became aware of the necessity to maintain oil reserves in order to mitigate the economy's exposure to a disruption of oil supply. Oil emergency stocks emerged as the best protection to cope with supply disruption as they can swiftly and effectively replace missing barrels.

Consequently, in 1968 (well before the oil price shocks of 1973-74 and 1979-80) the European Communities adopted legislation obliging Member States to maintain minimum oil and/or oil product stocks.[3] Originally, the obligation was equivalent to 65 days of domestic consumption of three distinct product categories (gasoline, middle distillates[4] and fuel oil). In 1972 this was raised to 90 days.

After the oil price shock of 1973 seriously damaged the world economy and created a period of high inflation and stagnation, the International Energy Agency (IEA) was created in 1974 with a mission to protect oil consuming countries. The IEA took over the 90-day stockholding obligation from the European Communities but introduced different rules to make allowance for the oil production of some of its member countries, particularly the United States. The IEA emergency system is basically geared to addressing large global disruptions.

In 2002, the Commission proposed a directive to increase the volume of stocks to be maintained in each Member State to 120 days, and to give the EU the possibility to decide how these stocks are used, not only in the event of a physical disruption but also in the event of a perceived risk which would trigger dangerous market volatility. Although the Commission failed to convince the European Parliament and the Council and subsequently decided to withdraw the proposal, the political debate resulted in several consensual conclusions, including the need for a closer link between Community crisis procedures and IEA mechanisms.

2.1.2. Characteristics of the EU stockholding system

The EU legislation puts the stockholding obligation on the Member States, who are free to choose their specific stockholding arrangements.[5] As a result, the transposition of the stock

---

2 Already in 1917 the United Kingdom introduced specific requirements on the stockpiling of energy fuels. France introduced similar provisions in 1925.

3 Council Directive 68/414/EEC of 20 December 1968 imposing an obligation on Member States of the EEC to maintain minimum stocks of crude oil and/or petroleum products, OJ L 308, 23.12.1968, p. 14

4 Middle distillates include gas oil, diesel oil, kerosene and jet fuel.

5 Directive 2006/67/EC mentions that Member States may recourse to the creation of a "stockholding body or entity" to hold all or part of their oil stocks.

directive in different Member States has brought about very diverse stockholding systems across the EU. Some Member States have set up government-owned stocks, others have established government-supervised agencies responsible for holding the emergency stocks, in a number of Member States stocks are entirely kept by the oil companies while yet others have opted for a mixed system (with an agency plus an obligation of a different extent on the industry). Today, 6 EU Member States rely entirely on mandatory industry stocks while in the other Member States all or part of the emergency stocks are held directly by the government or an agency. Management and ownership of stocks may be separated. For example, stocks held by agencies are often owned by the oil companies.

Although the stock directive allows holding stocks in the form of crude oil or intermediate products, on average, 56% of European emergency stocks are held in the form of finished products. The share of product stocks in individual Member States ranges from 20% to 100%.

Emergency oil stocks can be held on the territory of another Member State, provided a bilateral intergovernmental agreement exists between the Member States. At present, there are about 40 bilateral agreements in force and another 10 or so are under consideration or in the process of being agreed. Several Member States, especially in Northwest Europe, have a number of such agreements in force. However, seven Member States have refrained from concluding bilateral agreements and some of them expressly prescribe that all their stocks are located on the national territory.

Most of the stocks are owned by the entity which has the stockholding obligation. However, 11% of the emergency stocks are held through so-called "ticket" arrangements. Such stocks are owned and physically stored by another, typically commercial entity for a pre-determined fee. The holder of the "ticket" has an option to buy the stock in a crisis situation at the price set out in the agreement. "Ticket" agreements are usually concluded for a short (typically 3 months) period. This form of stockholding is used in several Member States, primarily for cost reasons. It may also give a certain flexibility to exchange oil products for reasons of aging/degradation or changing specifications.

Member States have to report their stock levels to the Commission (DG TREN) on a monthly basis. The tables showing stock levels at the end of each month have to be submitted at the latest by the 25th day of the second month after the month to be reported. According to the data reported, emergency stocks held by EU Member States amounted in spring 2008 to 143.4 million tons which is equivalent to 119 days of internal consumption. For Member States with a 90-day obligation (EU-15 plus Hungary, the Czech Republic, Slovenia, Cyprus and Malta) the coverage was 121 days while for countries with a transitional period[6] it was 94 days.

2.1.3. The EU system vs. the IEA system

While the oil stock systems of both the EU and the IEA require maintaining stocks of 90 days, they are independent of each other and apply different methodologies. In particular, the EU obligation is based on the consumption of three specific product groups while the IEA obligation is based on the net import of oil and oil products.[7]

---

6 Some of the new Member States are still benefiting from a transitional period for building up their emergency stocks before having to comply with the full 90-day obligation.

7 See more details on calculation methodology in section 2.2.3.1.

The independence of the two systems does not mean that Member States with IEA membership have a double (180-day) obligation. In general, the same stocks can be used for complying with the EU and IEA obligations. However, as a result of the different calculation methodology, some of the stocks qualify in one system but not in the other.[8] A convergence in this respect appears to be desirable.

Nevertheless, an independent EU system is deemed necessary because it is not likely that all EU Member States will join the IEA in the foreseeable future.[9] In addition, there may be smaller, regional disruptions which affect one or more Member States but do not trigger the IEA mechanism which is focused on disruptions with a global impact. For example, the disruption of supplies through an oil pipeline would potentially cause serious problems to the country(ies) concerned. If such a disruption has no significant effect on the global market, it is unlikely to trigger an IEA action but an EU action might still be required to mitigate the negative regional impacts.

The above justification for an independent EU system should not lead to a competition between the two systems. Instead, they should function in a complementary way, reinforcing each other in case of a disruption.

Similarly to the EU system, IEA member countries are free to choose their specific stockholding arrangements. Nevertheless, there is a clear tendency among the IEA countries towards public (government and agency) stocks. Today, 18 of the 27 member countries have public stocks (as opposed to 10 out of 21 in 1984), the share of which increased from 23% in 1984 to 37% in 2007.[10]

2.1.4. Other measures to cope with a supply disruption

Although oil stocks are seen as the most efficient tool to cope with an oil supply disruption, possible measures to mitigate economic harm include: replacement of oil by other fuels (fuel switching), increase of indigenous production (production surge) and reduction of demand by administrative measures (demand restraint measures).

As an example of fuel switching, oil used for electricity generation or for heating purposes may be easily replaced by other fuels, provided that technical systems are in place to allow the switch to the alternative fuel (e.g. natural gas). In the transport sector, where oil is the dominant fuel, it is much more difficult or almost impossible to replace significant amounts of oil in the short term. The same holds for the petrochemical sector. It is indicative that none of the IEA member countries used this measure to deal with the supply disruption following hurricane Katrina in 2005.

Similarly to stockdraw, a temporary increase of indigenous oil production can make additional oil available to the market. However, for technical, economic and business reasons, it is difficult to increase oil production quickly. Furthermore, only a limited number of oil producing countries such as the United Kingdom, Denmark and Romania would be able to resort to this instrument in the EU and most of them have little or no spare capacity.

---

8 For example, LPG and bitumen stocks are approved by the IEA but not by the EU.

9 See details on membership in section 2.2.2.1.

10 Public stocks have an even bigger role in emergency response: 56% of the stocks released in the Katrina action were public stocks.

Demand restraint measures have increasingly been applied in cities to quickly reduce air pollution levels and a similar approach may be useful in case of a supply disruption. Measures such as car-pooling, speed limits, driving bans, ecodriving, bus prioritising, telecommuting or compression of the working week can offer substantial additional savings. Most of these measures can be introduced at relatively low cost and at short notice but do require public acceptance which may sometimes be difficult to obtain. In addition, extensive demand restraint in the transport sector may hamper business and industry activities and would then be counterproductive.

Overall, these measures are of different effectiveness in a crisis. A non-producing country obviously cannot increase production, fuel switching may be limited to sectors where this is technically feasible (e.g. power plants which are able to switch to gas) while demand restraint measures often have a limited impact (e.g. speed limit reductions) and/or take some time to have an impact on consumption (e.g. encouraging public transport). Experience has shown that emergency stockholding and the ability to draw down such stocks are the easiest and fastest way of making large volumes of additional oil and/or oil product available to the market, thereby alleviating market shortage.

2.2. Reasons to review and revise the current legislation

2.2.1. Increasing risk of oil supply disruptions

Oil is the most important energy source globally and its demand continues to rise in all regions of the world. The IEA World Energy Outlook 2007 foresees in its reference scenario that total world oil consumption in 2030 would be 37% higher than it was in 2006. The EU also relies heavily on oil. The share of this fuel in the energy mix amounts to approximately 37%. Oil supply disruptions thus represent an important threat to the EU economy. In recent years the risk of disruptions has grown for a number of reasons. These include the strong global demand growth, the concentration of supply and the diminishing spare capacities.

Not only is oil a key energy source both globally and in the EU, but the global demand for it is expected to increase further in the coming decades. If future oil supplies are not sufficient to meet the rising demand in the next couple of years – as suggested by a recent IEA study[11] – this is likely to tighten the supply-demand balance, forcing spare production capacities down.

Spare production capacity provides flexibility to the international oil market when it faces a supply disruption. If such capacities are low, as can be seen today[12], they may not be enough to make up for a larger disruption. As a result of the tightening market, the EU is more vulnerable to oil supply disruptions. Also, any future supply disruption may have a bigger impact than in the past and even smaller disruptions may have serious consequences.

While oil consumption is increasing worldwide, supply is more and more concentrated in a handful of countries, many of which are exposed to high geopolitical risks. As a result of the uneven distribution of oil reserves across the world, it is expected that a growing share of global production (and of EU oil imports) will come from the Middle East. This raises concern about the risk of major oil supply disruptions because of the instability in many

11 Medium-Term Oil Market Report, July 2008

12 According to the IEA, effective OPEC spare capacity stood at 1.5 million barrels per day (mbpd) in July 2008.

countries of the region and past experience of disruptions from some countries in the last few decades[13].

The EU is particularly dependent on oil imports. In 2006, nearly 85% of the oil used in the EU was imported from third countries. Total EU oil production stood at 2.4 million barrels per day (mbpd) in 2006, down from a peak of 3.7 mbpd in 1999. The most important sources of import were OPEC countries (37% of extra-EU imports), Russia (33%) and Norway (15%). With the decreasing indigenous production, the EU's dependence is expected to reach 93% by 2030, and – due to the uneven distribution of reserves – a growing part of imports is expected to come from traditionally unstable regions.

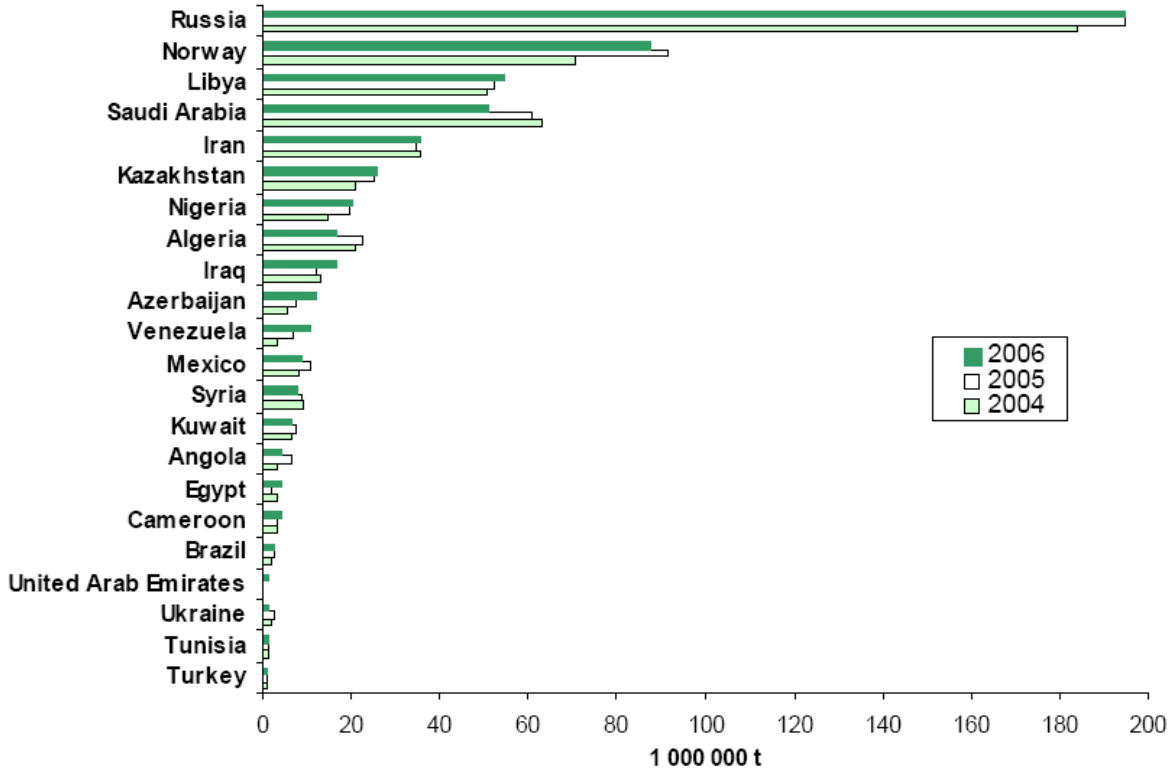

Figure 1: EU-27 Imports of Crude Oil and Feedstocks

Source: Eurostat

Supply from some producing countries can be threatened by wars, internal conflicts, export or import embargos and terrorism. In addition, oil movements from these countries often involve transport along long and vulnerable maritime and pipeline routes, susceptible to wars and other conflicts, terrorism, piracy and accidents. These risks are exacerbated by the resurgence of "resource nationalism" in several producing countries, raising the risk that these countries could use their market dominance to influence prices and/or "select" recipients of their supplies.

13 From the 17 serious oil supply disruptions involving a loss of at least 0.5 mbpd crude oil, listed by the IEA World Energy Outlook 2005, 12 was related to events in the Middle East (see Table 2 in section 5.2.4.).

Not only it is difficult to diversify oil supplies due to the uneven distribution of oil reserves, but it is also hard to substitute it with other fuels. While oil has been mostly phased out from European electricity production and its role is decreasing in heating, it still dominates transport, where it has limited viable alternatives.[14] Without a technological breakthrough, oil may continue to have a dominant role in this sector in the next decades. Oil is also replaceable with difficulty as the feedstock for the chemical industry. Furthermore, for the lack of alternatives, oil demand appears to be increasingly unresponsive to oil price, at least in the short run[15], aggravating the potential impact of a disruption on oil prices.

A disruption can certainly occur not only in producing countries or intercontinental transport routes but also within Europe. Many of the inland refineries, supplied by pipeline, have no or limited possibility to switch to another supply route if the pipeline is blocked for whatever (political, technical, etc.) reason. In January 2007, the Druzhba pipeline carrying oil from Russia to Europe was halted due to a conflict between Russia and Belarus, cutting oil supplies to many refineries in the EU. Refineries, inland waterways and ports receiving oil tankers may also be vulnerable to accidents, terrorist attacks or strikes. In March 2007, an 18-day strike at France's Fos-Lavera oil hub threatened to shut down a number of refineries in France, Germany and Switzerland and cause a regional fuel shortage. Storage facilities might be also exposed to the above risks but their large number and geographical spread makes them less vulnerable than e.g. refineries or pipelines.

The above factors and examples imply that the threat of oil supply disruptions is real and the risks are growing, as is the EU's vulnerability. In order to cope with such a disruption, the European Union has to have a robust and reliable system in place which is able to react coherently and credibly in the event of a supply crisis. However, analysis of the current system presented below reveals flaws which might prevent it from functioning suitably in case of an actual supply disruption.

2.2.2. Current policy tools are not adequate for disruption response

The current system developed in the EU over the last four decades has served Europe well so far but is certainly not ideal and fully up to date. Although the legislation underwent an overhaul in 1998[16] and a codification exercise in 2006[17], it suffers from some shortcomings

14 In 2005, the market share of biofuels, the most credible alternative to oil in the transport sector reached an estimated 1% in EU-25.

15 A recent study by Jonathan Hughes, Christopher R. Knittel and Dan Sperling, Evidence of a Shift in the Short-Run Price Elasticity of Gasoline Demand (NBER Working Paper No. 12530, September 2006, http://www.nber.org/papers/w12530.pdf; The Energy Journal, vol. 29, no. 1), found that US demand for gasoline is much less sensitive to price increases than it was in the 1970s. The study found that the price elasticity of demand for gasoline ranged from -0.034 to -0.077 during the period 2001-2006, compared to -0.21 to -0.34 for 1975-1980 – a decrease of a factor of almost 10. John C. B. Cooper's study entitled Price elasticity of demand for crude oil: estimates for 23 countries (OPEC Review, 2003, Volume 27, Issue 1, http://www.blackwell-synergy.com/doi/pdf/10.1111/1468-0076.00121) found short-run price elasticity for examined EU Member States ranging from -0.016 to -0.087.

16 Council Directive 98/93/EC of 14 December 1998 amending Directive 68/414/EEC imposing an obligation on Member States of the EEC to maintain minimum stocks of crude oil and/or petroleum products, OJ L 358, 31.12.1998, p. 100

17 Resulting in Council Directive 2006/67/EC of 24 July 2006 imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products, 0J L 217, 8.8.2006, p. 8;

which might prevent the system built on it from functioning suitably in case the EU or the global oil sector comes to face a real supply difficulty.

Below is a brief description of the aspects of the current system which seem most in need of addressing. At present, they limit either the EU's ability to react to an emergency with the highest efficiency and to the desired effect, or the EU's capacity to participate most efficiently in collective global efforts to minimize impacts of a supply crisis. The limitations and shortcomings of the current European system of emergency oil stocks also jeopardize the much needed trust that, in case of a disruption, the reported stocks are indeed available and sufficient to fill in the gap and ensure consistent supply. Finally, it is questioned whether the current structure of emergency stocks suits the need of the economy in a crisis.

2.2.2.1. Lack of rules for common action

Current EU legislation does not provide for a special decision making process at EU level to respond to oil emergencies. In case of a supply disruption, the Commission's role is confined to consultation. It convenes the Oil Supply Group, on its own initiative or at the request of any Member State, to "carry out the necessary consultations in order to ensure coordination of the measures". However, the emergency measures including the drawing on emergency stocks are decided and executed by the individual Member States. The only restriction is that, prior to the consultation in the Oil Supply Group, they should refrain from drawing stocks to below the compulsory minimum level.

The IEA system, on the other hand, is clearly geared toward a swift and effective response to disruptions having a global effect. While the EU legislation merely foresees a consultation between Member States in case of a supply disruption, the International Energy Program, the founding document of the IEA, establishes specific and well defined tasks for member countries and the Secretariat in an actual oil emergency. The same holds for emergency response based on voluntary agreements such as the IEA collective action in response to the oil supply disruptions in 2005 caused by hurricanes Katrina and Rita.

Alas, there is no reference in the EU legislation to the IEA and to what should happen if the Agency proposes a collective action. Nine of the EU Member States (Bulgaria, Cyprus, Estonia, Latvia, Lithuania, Malta, Poland, Romania and Slovenia) are not members of the IEA and most of them are not likely to join in the foreseeable future.[18] (Potential future EU Member States, with the exception of Turkey, are not members of the IEA either.) These countries are obliged to hold stocks under the EU system but are not seen as participants in broader crisis management in the IEA framework and have no experience or training in how to handle emergency issues. If, in the spirit of solidarity, the EU wants these countries to participate in an IEA-led action to cope with a severe global supply disruption, this calls for an enhanced role for the Commission and improved coordination with the IEA.

An adequate crisis management in future supply disruptions is possible in Europe with difficulty unless the EU and the European Commission clarify their roles and relationship to the IEA and its emergency policy. The lack of clear rules indeed caused some confusion during the implementation of the 2005 collective action of the IEA, when, although the Commission publicly supported the action, some Member States were uncertain whether they

18 Poland is likely to become a member country in 2008.

were allowed to draw stocks below their 90-day obligation. This certainly was the case, but it took the Commission some time to announce a formal derogation.

2.2.2.2. Doubts about stock availability/reliability

One of the problems of the current system is that not all Member States may be implementing all the provisions of the existing legislation as required. If Member States report insufficient stock levels or report systematically late, the Commission does not hesitate to pursue infringement procedure against such countries. For example, in 2005 Commission services examined 5 infringement cases, of which 4 resulted (at least) in the issuance of a letter of formal notice as the first formal step of the procedure, while in 2006, 7 cases were examined, 5 of which resulted in issuing a letter of formal notice. The Commission also decided to issue a reasoned opinion in a number of these files and to refer one case to the Court of Justice[19], although most procedures have since been closed. However, some practices not in compliance with the existing legislation are relatively difficult to recognize and prove. The situation is exacerbated by the fact that some provisions of the current directive (notably Article 3) give rise to different interpretations, resulting in different compliance practices across Member States.[20] Meeting the stockholding obligation by the use of "tickets" also gives rise to concerns with respect to both the availability of such stocks and the correct reporting of stock levels. These issues are further elaborated below.

The diversity of Members States' stockholding systems makes it very difficult to assess the correct application of the directive. At present the Commission can only check the figures reported by Member States. In addition, the IEA emergency response reviews – if available – can help to understand the specific stockholding structure used in the given country. Infringement procedures can give the Commission further insights as to where Member States are at fault. Another insight to an emergency system can be provided by an actual supply disruption in which Member States have to show how robust their stockholding systems are. The emergency response action of IEA and EU Member States in 2005 to cope with the damages caused by Hurricane Katrina in the Gulf of Mexico was such a test. The outcome of this action which used, on an average, less than three days of emergency stocks indicated some problems, in particular related to stock availability and stock release management.[21]

A stockholding system for emergency oil stocks has to ensure that such stocks are actually held and are available for release in the event of an emergency. Doubts about the availability of stocks in the context of an actual or potential crisis may lead to market speculation and increased price volatility. An effective stockholding system thus acts as a deterrent to speculation. Doubts may also undermine the expected positive effects of an emergency response.

19 In its judgement of 17 July 2008, the Court of Justice declared that Belgium had failed to fulfil its obligations under the EU legislation.

20 For example, it seems that current interpretations or legislations in some Member States may allow the pledging of emergency stocks.

21 IEA document "Emergency Preparedness: Lessons from the Hurricanes" (IEA/GB(2006)4/REV1) emphasized the lacking accountability of industry stocks "taken up" by the market. Some countries using industry stocks to fulfil their participation in the concerted action failed to demonstrate how additional oil was made available to the market by their actions.

In this context, the main question is not the extent of the obligation but the volume of stocks which is really available in a crisis. The answer to this question is related to the stockholding system which has been chosen by individual Member States. A stockholding system which relies on government or agency stocks and in which public/state ownership of stocks is compulsory may have the full amount of 90 days at its disposal. A stockholding system which relies on mandatory industry stockholding may have less oil available as in this case emergency stocks are typically commingled with working or commercial stocks. Such arrangements do not appear to fulfil completely the objectives of the Directive, one of which is to ensure the stocks' full availability and their accessibility to the consumer (Article 3). However, in some Member States the current practice allows that Minimum Operational Requirements[22] (MOR) and more generally any of the operational stocks are counted as emergency stocks. Apparently, some administrations have no full knowledge of such stocks, putting doubt on how a government control over emergency stocks could be put into practise if needed.

The use of "tickets" can also limit the availability of emergency stocks in a supply disruption, in particular when stocks held under such arrangements are located abroad. Critical expertise confirms that "tickets" are not very transparent and are difficult to monitor with the frequently used three-month validity period. "Tickets" do not provide additional oil to the security system and, in addition, there is no guarantee for the renewal of expiring "ticket" contracts. In 2007-2008, a number of Member States reported scarcity of "tickets", making it difficult to buy such instruments under reasonable conditions.[23]

In the public consultation, a stakeholder claimed that "ticket" stocks are often encumbered by forward sales contracts. Again, this practice undermines the availability of such stocks in the event of a crisis.

Furthermore, there is practically no experience with the use of "tickets" in a supply disruption. Critics may assume that, depending on the specific supply disruption, it will be very difficult or even impossible to purchase the reserved oil. When such stocks are held abroad, the information on the specific "tickets" is sometimes unclear because of double counting problems or delays in administrative procedures. An analysis of the IEA shows that in Europe total stocks reported to be held abroad under bilateral agreements are well above the level of total stocks reported to be held domestically for other countries, suggesting that 10-20% of stocks could be counted more than once (see Figure 2). Clearly, there is a need to address this problem and avoid such discrepancies.

22 There is no universally accepted definition of the Minimum Operational Requirements (MOR). Nevertheless, the concept is often used, referring to the minimum amount of oil and oil products which is needed for the day-to-day operation of the oil industry. It is affected by a number of factors, including the size of the refining industry and whether oil is supplied by pipeline or ships. MOR is narrower than working/operational stocks; the latter may include stocks held for other business purposes.

23 A Member State invoked this explicitly in connection with a recent situation of non-compliance.

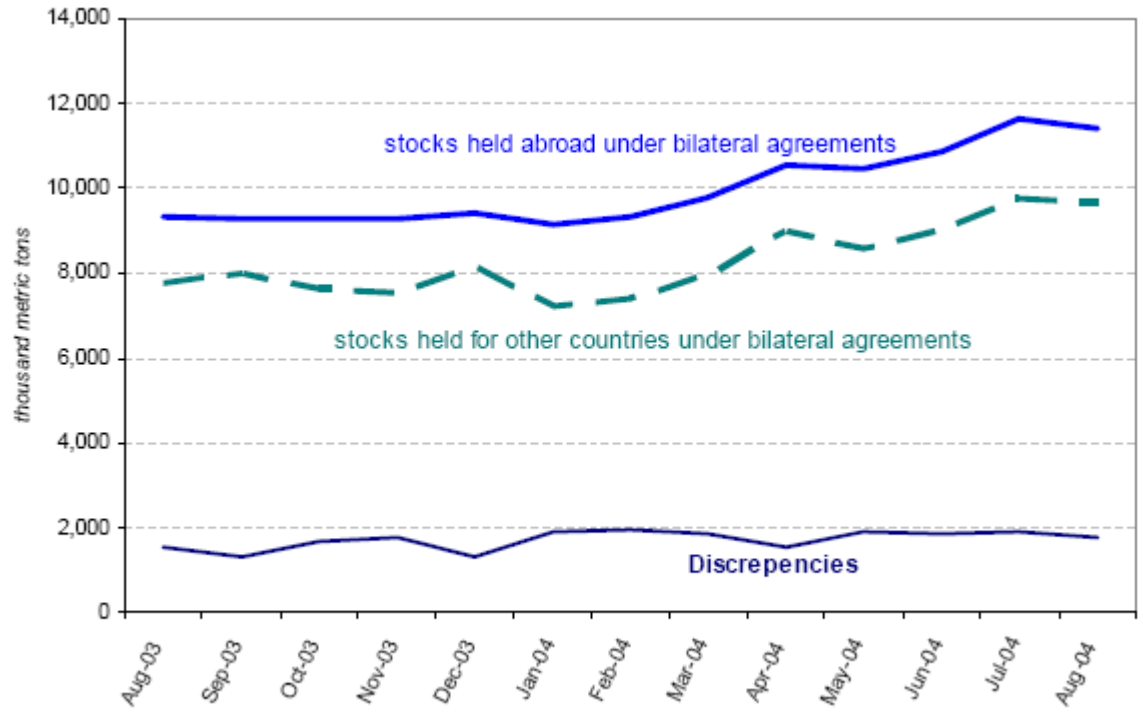

Figure 2: Bilateral Reporting Discrepancies

Source: IEA

2.2.2.3. Stock Composition

The existing product categories must be adapted to changing demand patterns and the needs in a crisis situation. It may be necessary to integrate new and to delete obsolete products from the current categories. A complete change or deletion of product stockholding does not appear appropriate, based on the experience of the Katrina disruption which, in addition to closing oil production facilities, also shut down a number of refineries in the United States.

The current system establishes fairly aggregated product categories, endangering the availability of potentially key oil products. For example, jet fuel belongs to category II (middle distillates) but it is significantly more expensive to store than other middle distillates and therefore stored in relatively small volumes as part of the emergency stocks. In addition, some important products (e.g. naphtha) are not covered in the current product categories.

Product category 3 (fuel oils) in particular needs revision due to its decreasing importance in Europe. The consumption of fuel oil today amounts to about a quarter of what it was in the early 1970s as it has been continuously phased out from both electricity production and other sectors.

The use of naphtha (a light distillate) as a feedstock for the petrochemical industry and for its use in energy must be also taken into consideration.

The increasing share of biofuels also raises some questions with respect to emergency stocks. In particular, it is to be clarified whether the use of biofuels, either in pure or blended form,

impacts on the stockholding obligation. It is also necessary to determine the extent and conditions in which biofuels or biocomponents can qualify or may be mandated for inclusion in emergency stocks.

2.2.3. Other shortcomings

The shortcomings described in this subchapter are not necessarily undermining the efficiency of the emergency oil stock system but might have undesirable (side) effects which could be avoided or mitigated.

2.2.3.1. Administrative burden on Member States

EU Member States with IEA membership have to ensure that their stocks comply with two different obligations, one set by the EU, another by the IEA. Member States sometimes complain about the administrative burden of complying with these two distinct obligations.

While the IEA stockholding obligation is based on net oil imports (including both crude oil and products but excluding naphtha), the EU obligation is based on the consumption of 3 specific product groups (gasoline, middle distillates, fuel oil), covering about 80-90% of all petroleum products. EU Member States are required to hold products (90 days for each of the three product categories) but can also hold crude oil which is then recalculated to products. The IEA obligation in turn does not specify whether stocks should be held on the form of crude oil or specific products. As a result of the discrepancies, some stocks are taken into consideration in one system but not in the other.

Concerning the calculation of stock levels, in the EU system crude oil is converted into products, usually based on refinery yields. Conversely, the IEA converts product stocks to crude oil equivalent. In addition, according to the IEA methodology a 10% deduction is made in order to account for unavailable stocks, such as tank bottoms. Another important difference is that the IEA explicitly allows the inclusion of working stocks.

The deadline of compliance to the previous year's consumption/net imports is 31 July in the case of the EU and 1 January in the case of the IEA.

In order to decrease the burden of responding to two different 90-day obligations, a review and possible harmonization should be undertaken concerning:

- the calculation base (consumption or net imports),
- eligibility of crude and/or products (since it covers only three product categories, the EU stockholding obligation is currently lower than that of the IEA, which covers all categories of oil except naphtha),
- deadline of adjusting the obligation to the previous year's consumption/net imports (immediately at the beginning of the following year or with a delay of 7 months),
- a deduction for unavailable stocks.

Another issue resulting in undue administrative burden is related to stocks held abroad. The existing EU legislation provides for the possibility for Member States to hold stocks in the

territory of other EU Member States. From the perspective of a functioning internal market, some of the rules might seem rather restrictive. Stockholding in other countries is only allowed on the basis of bilateral agreements between Member States and is subject to specific conditions and notifications. This imposes additional burden on both administrations and companies. In addition, it can restrict the possibility of a company to choose the location of its stocks (if there is no bilateral agreement between the countries concerned). Similarly, the IEA takes stocks held abroad into account on the condition that a bilateral agreement is in place between the member countries concerned.

2.2.3.2. Distortion of competition

Although the current legislation calls for "fair and non-discriminatory" stockholding arrangements, this is difficult to realize if all or part of the emergency oil stocks are held by the industry. This is due to the fact that the level of operational stocks (i.e. stocks kept for commercial or logistical reasons) held by importers is generally lower than for refiners. Thus, imposing on everybody the obligation of keeping e.g. 90 days of stocks turns out to be more costly for importers since they have to top up their stock above the normal “operational” level by a higher amount of days than refiners. In addition, small importers may face difficulties in finding access to storage facilities.

Some Member States have tried to address these issues by setting a lower obligation for non-refiners or by establishing a turnover threshold, under which companies are not obliged to hold emergency stocks. However, these solutions are unlikely to end the discussion of different market players over a "level playing field" and may encourage companies to evade the law (e.g. by dividing a company up into smaller ones which are not subject to the obligation).

2.2.4. Other issues to be addressed

2.2.4.1. Sufficiency of 90 days

The EU introduced a stockholding obligation of 65 days in the 1960s, before the IEA had been created. Later, in the 1970s, the stockholding obligation was fixed in both the EU and the IEA at 90 days. The choice of the 90-day level is arguably arbitrary. It is probably based on tradition[24] rather than on economic or risk analysis. However, it has become the accepted standard worldwide and, for example, China has recently decided to copy the obligation to hold 90 days of stocks.

Doubts about the sufficiency of stocks had been expressed by the European Parliament which, in a report adopted in February 2007[25], called for an increase in the stockholding obligation from 90 to 120 days. Doubts were also expressed in the press, related to the capability of EU Member States to support the United States after hurricane Katrina in 2005. However, analyses show that present stock levels would last for a reasonably long period even in case of a serious supply disruption[26].

---

24 In 1925 France imposed the requirement on its oil industry to reserve stock representing 25% of the declared amount delivered during the last 12 month.

25 2006/2247(INI) European Parliament resolution on the macro-economic impact of the increase in the price of energy

26 See chapter 5 for more details

2.2.4.2. Diversity of national systems

Directive 2006/67/EC requires Member States to keep crude oil or petroleum product stocks equivalent to a minimum of 90 days' internal consumption for each of three main categories of petroleum products (gasoline, middle distillates and fuel oils) but does not specify in which way Member States should organise the holding of these stocks (apart from declaring that they may make recourse to the creation of a "stockholding body or entity" to hold all or part of their oil stocks). Thus, the transposition of the above directive in different Member States has brought about very diverse stockholding systems across the EU.

This diversity in itself does not constitute a problem. However (as it is explained in 2.2.5.1. below in more detail), if the systems provide a widely different quantity and/or quality/availability of stocks, this may jeopardise the emergency preparedness of the EU as a whole.

2.2.4.3. Transparency/reporting

In comparison with other parts of the world, Europe's stock reporting is infrequent and has a long reporting lag. Emergency stock levels are reported to the Commission (to DG TREN) on a monthly basis with a lag of nearly 2 months, based on a special Commission questionnaire. Stock data are collected on the basis of Council Directive 2006/67/EC. Reporting is confined to the volume and form (product category) of stocks; no information is provided on the exact location of stocks and the entity holding/owning them. Although the Commission continues to enforce the reporting discipline foreseen in the current legislation, it is not unusual that some Member States repeatedly fail to comply with this fairly long deadline.

There are no provisions on the publication of the stock data. Nevertheless, emergency stock levels are frequently published on the website of DG TREN, but the regularity and timeliness of this publication is largely dependent on Member States' reporting discipline.

Beyond the above, specific supply of stock data, Member States provide to the Commission (to Eurostat) responses to the Monthly Oil and Natural Gas Statistics (MOS) questionnaire which, among others, comprises extensive information on oil and petroleum products stocks. The MOS questionnaire is common with the IEA which uses it to calculate the compliance of its member countries. Submission deadline is three months after the reference month (M-3)[27] and the data is subject to revisions in conjunction with the IEA Secretariat. In addition, oil stocks related information – not as detailed as in the MOS – is also provided to the Commission (to Eurostat) via responses to the Joint Oil Data Initiative (JODI) questionnaire. This questionnaire is common not only with the IEA, but with other international organisations as well. Submission deadline is 25 days after the reference month (M-1).

MOS information is currently collected from EU Member States on a gentlemen's agreement basis but, together with JODI information, it is also included in the Energy Statistics Regulation which has been adopted by the European Parliament in its plenary session on 12 March 2008. With its entry into force, Member States will have a legal obligation to provide this data.

27 MOS is reported to the IEA Secretariat two months after the reference month (M-2).

It is worth mentioning that the Commission is currently setting up the Energy Markets Observation System (EMOS), a database containing data and information relating to the oil, gas and electricity sectors. EMOS will also provide the possibility for external entities to send in data through the filling in of internet-based forms. Utilizing this feature, a module of the system is developed to simplify the reporting, analysis and publication of emergency stock levels.

Although the reporting of commercial stocks is not directly related to emergency stocks, it has to be recognized that in an emergency, commercial stocks might also contribute to an emergency response. Therefore, it can be argued that better data on commercial stocks can contribute to better emergency preparedness and definitely help to achieve better market transparency. Insufficient transparency or reliability of market data is often claimed to contribute to volatile prices.

Commercial stocks are viewed as an important indicator of prices and are one of the most closely watched aspects of the oil market. However, it is hard for the industry to follow global stocks as closely as it would like, because the United States and Japan are the only countries to publish comprehensive weekly stock data. China and Korea have also declared their intention to publish weekly stock levels.

European commercial stock data are reported monthly by Euroilstock which was set up by the oil industry and the European Commission in 1984.[28] Stock data are based on input from more than 80 participating companies in EU-15 and Norway, arriving on the 5th working day of each month. Participation is voluntary. Stock data are published through Reuters (available to subscribers), on the 7th working day of each month, reflecting stock levels at the end of the previous month.

It has to be kept in mind that, contrary to the United States, emergency stocks and commercial stocks are not strictly separated in all EU Member States. This might make it more difficult to report and to distinguish commercial and emergency stock data.

In July 2008, in view of improving the transparency of the oil market, the ECOFIN Council reached a political agreement on publishing information on commercial oil stocks on a weekly basis. However, during the public consultation many Member States and stakeholders expressed their concerns over the supplementary costs, administrative burden, the potential inaccuracy of data and the volatility this might provoke. In order to address these concerns, to assess the potential impacts and to identify the desirable modalities of weekly reporting, the Commission will launch a feasibility study in late 2008.

2.2.5. Justification of action at EU level

2.2.5.1. "Subsidiarity Test"

Energy security is a public good and – due to the existence of the internal market – the benefits of the stocks released in a crisis cannot be limited to a single country. The internal market ensures that any stock released can flow freely to any buyer EU-wide. The benefits from releasing stocks will not be captured by a single country but by the EU as a whole[29]. As

28 Originally, coordination of Euroilstock was in the hands of the Commission. As of July 1986, this task was taken over by the oil industry and for this purpose "Stichting Euroilstock" was established in the Netherlands.

29 In so far as the stock release helps to mitigate the oil price rise, the benefits "spill over" to other oil-consuming countries as well.

a result, if the emergency systems adopted by individual Member States are too diverse and provide different levels of preparedness and reliability (e.g. different quantity and quality/availability of emergency stocks), this may lead to decreased efficiency and a free rider problem. The countries having sounder systems dedicate more efforts to the establishment and maintenance of their systems, and would probably contribute disproportionately more in case of real trouble.

Since oil markets are global, any disruptions to oil supply – whether occurring in one or more Member States or outside the EU – will have repercussions on all Member States. Furthermore, in integrated economies such as the EU internal market, the level of emergency preparedness of any single Member State will influence the level of preparedness of the Union as a whole. If minimum requirements are imposed throughout the EU, it may be easier to avoid the emergence of a problem or to cope with a disruption.

It must also be kept in mind that several Member States are not members of the IEA, which is responsible for emergency response in case of global disruptions. The European Commission takes part in the work of the agency but full EU participation in an IEA action can only be guaranteed through an EU mechanism involving EU Member States that are IEA non-member countries.

The above arguments all imply that the objective of maintaining a high level of security in the supply of oil and oil products within the EU can be best achieved in a coordinated way. Clear rules at the Community level are therefore needed.

2.2.5.2. Political mandate

The 2007 Spring European Council acknowledged that global warming, together with the need to ensure security of supply and to enhance competitiveness, make it ever more vital and pressing for the EU to put in place an integrated climate and energy policy combining action at the European and the Member States' level. To back up such a policy, the Council adopted a comprehensive energy Action Plan for the period 2007-2009 which – inter alia – underlines the need to enhance security of supply for the EU as a whole as well as for each Member State through a number of measures. One of these actions addresses emergency oil stocks: the European Council gave a clear mandate for the revision of the current system by calling for "improving oil data transparency and reviewing EU oil supply infrastructures and oil stock mechanisms, complementary to the IEA crisis mechanism, especially with respect to availability in the event of a crisis".

3. WHAT ARE THE OBJECTIVES?

3.1. General objectives

3.1.1. To strengthen security of supply by an effective instrument based on solidarity, transparency and practicality

The EU, like all advanced economies, depends heavily on continuous, reliable and affordable supply of oil and oil products. Any difficulty, even temporary, having the effect of reducing these supplies, could cause serious disturbances in the economic activity of the Community. The EU must therefore be in a position to offset or at least to diminish any harmful effects in such a case.

Provided that emergency stocks exist, their release constitutes the easiest and fastest way of making large volumes of additional oil and/or oil product available to an undersupplied market, thereby alleviating market shortage. In order to allow an effective response to oil supply disruptions, the emergency oil stock system has to ensure the solidarity of Member States in case of activation. It has to allow for correct monitoring through transparency of calculations and reporting. Overall, it has to be characterized by practicality in order to ensure the effectiveness of its use. The general objective of the proposal is therefore to strengthen the capacity of the system to react to an emergency, by improving its efficiency and effectiveness.

3.1.2. To minimise negative impacts of a disruption on EU economy

The economy's reliance on oil is especially true for transport, the main user of oil, which at present has no real alternatives to the use of oil at its disposal. Considering the important role of transport in the economy, a physical shortage of fuel would have serious repercussions in other sectors, as well as on the mobility of citizens.

Emergency oil stocks are not meant for market intervention or price manipulation. A release of stocks should be realized only in case of a severe disruption that significantly reduces oil supplies. It will then be important to compensate for missing volumes and to ensure the integrity of supplies to consumers and thereby to mitigate negative economic impacts.

However, a disruption of oil supply (e.g. outages in a major producing country) may not necessarily entail a physical shortage of oil in Europe and yet may – due to the low price elasticity of oil demand – bring about skyrocketing prices which could also impact negatively the economy. A well-grounded and credible system of emergency stocks, by its pure existence, can have a moderating impact on markets in case of a disruption. The release of stocks can replace disrupted volumes and thereby it might be possible to avoid physical shortage and/or large price hikes. As a result, negative impacts on the economy could be mitigated.

Oil stocks thus have a crucial role in minimizing the negative impact of a temporary supply disruption on the EU economy. This holds as long as they are available in required quantities, qualities and degrees of accessibility.

3.2. Specific objectives

3.2.1. To assure that the stocks have the potential to address shortage

In a supply disruption, it is essential to replace disrupted oil swiftly and effectively. Therefore, emergency stocks have to be fully available in the required quality and in the required quantity. At least a part of the stocks have to be in the form of finished products, serving as an instant remedy even if refineries came to a halt. Moreover, unless the reporting of stocks is appropriate, in terms of frequency, timeliness and report quality, the available quantity and quality of stocks cannot be assessed.

3.2.2. To be able to release stocks effectively

Although the directive stipulates a consultation between Member States in case of a disruption, up to now the EU has not created a clearly defined framework for oil emergency policies and for adequate procedures and measures to use in an oil supply disruption. Crisis management has to be swift and effective. Therefore the EU's relationship with the IEA, which has an internationally accepted mandate to deal with global oil supply disruptions, needs to be clearly defined. At the same time, the relationships between the European Commission and Member State administrations, which are in charge of emergency stockholding, have to be better defined, and, thus, needs to be revised.

Decision making procedures have to be better defined and there is explicitly a need to define complementary procedures to the IEA crisis management. This is particularly important for Member States which are not members of the IEA, since they are not enabled to receive regular information on emergency issues through the relevant IEA committees.

3.2.3. To increase the credibility of the system and show readiness

When the system of emergency stocks is credible, market players are convinced that reported stocks are available and, if necessary, can be offered to the market in a swift way. This can prevent extreme market reactions when supplies are potentially or actually disrupted. Therefore, price hikes and speculation may be avoided or at least mitigated. If, however, not all 90 days of emergency stocks can be available to the market, in a very severe supply disruption this may hamper the trust that the system is working effectively.

3.2.4. To simplify compliance burden for Member States

In addition to the costs of buying and holding stocks, emergency stockholding entails for the Member States also administrative burden related to calculation, control and reporting on the stock levels. Member States have to ensure that the stocks are at their disposal. This requires a reporting and control system. If stocks are held abroad and/or by way of "ticketing" or other similar instruments, controls are especially important. If a Member State wants to hold stocks abroad, it has to negotiate a bilateral agreement with the Member State concerned. This is time consuming and checking these stocks involves extra efforts.

Member States which are also members of the IEA[30] have to comply with two different stockholding obligations, with different calculation methods and separate reporting. The IEA calculation and reporting methodology is internationally employed and accepted. In addition, some EU Member States intend to join the IEA.[31] Aligning the calculation and reporting method within the EU to that of the IEA would reduce the administrative burden which arises through the duplication of administrative work.

Notwithstanding the importance of reporting and control, the Commission has to make an effort to ease the administrative burden on Member States and the industry. This is in line with the Commission's Better Regulation strategy and the simplification programme. In particular, the Commission may approximate the EU and IEA system (e.g. common reporting and the uniform calculation of the stockholding obligation and compliance). Further simplification can be achieved by replacing bilateral agreements with a multilateral framework, coupled with an enhanced control system. In addition to reducing administrative burden, this would be also more in line with the internal market.

3.3. Operational objectives

3.3.1. To select best practises/arrangements

Oil security and energy security is not for free. Sometimes Member States may have chosen low-cost policies which are in a crisis less efficient as they do not provide 90 days of stocks. These practises may have negative impacts on Member States' ability to act adequately in an emergency and may explain to some extent why emergency preparedness is divergent across the EU. The Commission's role in this context is to moderate excessive divergences and to avoid a serious lack of solidarity from some countries in an emergency response to a crisis.

In the spirit of subsidiarity, the Commission should not prescribe in detail to Member States ways and means of fulfilling emergency or stockholding obligations. However, in reviewing Member States' emergency policies, there might be a need for the Commission to indicate specific deficiencies of existing systems and to highlight existing best practices in Member States, particularly concerning stockholding arrangements.

In addition to choosing an appropriate stockholding arrangement, it is also important to have the right emergency policies and measures to address an actual disruption. It may be useful to establish what policy tools and procedures are most suitable in an emergency. In the context of stocks, the procedures should facilitate swift and visible stock release.

Stock release is not the only policy tool at the disposal of Member States. They can also implement demand restraint measures (e.g. restriction of passenger car use), in some sectors it is possible to replace oil by other fuels (fuel switching), while oil-producing countries might also resort to the increase of indigenous production (production surge). In a severe supply disruption, the combination of the above measures might be desirable.

---

30 EU Member States who are also members of the IEA are: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Slovakia, Spain, Sweden, United Kingdom.

31 Poland is likely to become an IEA member country in 2008.

3.3.2. To optimize the stockholding system in terms of quantities of stocks held (90-day stockholding obligation vs. 120 days etc.)

The Commission has started to analyse the availability of emergency stocks and at the same time is aware of the fact that the extent of the 90 day obligation has been questioned by some stakeholders. The optimal size of emergency stocks is inevitably a compromise between security and costs. It has to ensure the replacement of disrupted oil volumes for a sufficiently long period of time, without inducing excessive financial burden.

In strengthening the system, there may be no need to increase the 90 day obligation but the availability and reliability of stocks should be improved. However, if the difference between the "nominal" 90 days stocks and the really available level of stocks in a crisis is significant, the request of the Parliament to increase the stock obligation to 120 days might be a very reasonable proposal.

It is worth noting that the harmonization of the EU stockholding obligation with that of the IEA may slightly increase EU stock levels in comparison to the existing levels.

3.3.3. To optimize the stockholding system in terms of frequency of data reporting for oil stocks and the nature of such reports

Considering the low volatility of the level of emergency stocks, increasing the reporting frequency on such stocks is probably unnecessary. Conversely, the long reporting lag specified in the current legislation can and should be reduced.

On the other hand, the request of some stakeholders to introduce more frequent reporting on commercial oil stocks seems more reasonable. Higher transparency of oil market developments may give higher benefits to the end consumer of oil products. These benefits might outweigh the potential, often disputed disadvantages (e.g. increased market volatility). Europe might have a need to follow important consumer regions like North America or Asia (Japan, China, Korea) where more frequent reporting of commercial stocks is already in place or will be soon.

3.3.4. Establishing the rules for EU interaction with IEA

It is necessary to define the role of the Commission vis-à-vis the IEA. In addition to the majority of EU Member States, the European Commission participates in the work of the IEA[32]. However, this is not the case for the EU Member States which are not members of the IEA. It is to be decided if the latter should be involved in common actions. If so, this obviously necessitates some action/co-ordination from the Commission.

A smaller, regional disruption may not trigger an IEA action. Nevertheless, such a disruption might have serious implications on the supply on one or more Member States which requires an action at the EU level. The EU needs therefore to have at its disposal its own instruments, independent from the IEA, to solve energy supply problems which do not require solidarity actions from countries outside Europe such as Japan or the United States. Nevertheless,

32 The Commission is not a full member of the IEA but practically has an "active" observer status: it has the right to have access to meetings of IEA bodies, to receive documents, and to speak and make proposals, but has no right to vote in those bodies.

considering the expertise and the market knowledge of the IEA Secretariat, co-operation with the IEA might be useful even in such a case (e.g. exchange of information).

In summary, the Commission and the IEA mechanism should function in a complementary way, without undermining the efforts of each other.

3.3.5. Simplification of the regulatory environment

The regulatory framework in which businesses operate is a key factor of their competitiveness, growth and employment performance. Therefore, a key objective of the European Union's enterprise policy is to ensure that the regulatory environment is simple and of high quality. To make sure that regulation is used only when necessary and that the burdens it imposes are proportionate to their aim, the Commission has a number of processes and tools in place, including measures to simplify existing legislation.

There is possibly scope for simplification with respect to the EU legislation on emergency stocks, which could help not only businesses but also Member State administrations which are involved in the management and/or control of stocks. An approximation of EU and IEA rules would definitely be beneficial to those countries which have to comply with the stockholding obligation of both institutions. It could simplify the calculation of the obligation and also reporting (see also section 3.2.4.).

A further possibility for simplifying legislation is to replace the bilateral intergovernmental agreements, which are at present necessary for holding stocks abroad, with an EU-wide framework. This measure has also been suggested by several Member States.

4. WHAT ARE THE POLICY OPTIONS?

The proposed policy options aim to address the issues of ownership and management of stocks, quality and quantity of stocks, the calculation and reporting methodology, crises management and monitoring of compliance.

The following generic policy options were analysed in order to address the problems and challenges presented in chapter 2:

- No policy change
- Reinforcing control means and coordination mechanisms within the existing system
- Establishing centralized EU system with mandatory state/public ownership of emergency stocks
- Creating "dedicated" EU emergency stocks within a revised version of the existing system

However, there are a number of issues which are independent from the above options but should be tackled in order to overcome some of the shortcomings of the current system. These issues, primarily relating to the calculation of the obligation and of compliance, to reporting and to the role of the Commission in case a disruption, are addressed in 4.5, separately from the above-mentioned generic policy options.

4.1. Option 0: No policy change

This option supposes that the existing legal and regulatory framework remains unchanged and that the current policy instruments and measures continue. It can be considered a "business as usual" scenario.

The most important elements of this option:

- A 90-day stockholding obligation based on the consumption of three product categories (gasoline, middle distillates and fuel oil);
- Product stocks can be replaced by crude oil or intermediate products;
- Member States are free to choose their stockholding arrangements, including the ownership, the management and the location of stocks;
- Stocks may be held in another Member State if there is an intergovernmental agreement in place;
- Stock levels are to be reported every month by completing a special questionnaire with a time lag of 1 month and 25 days;
- In case of a supply disruption, the Commission's role is confined to consultation.

4.2. Option 1: Reinforcing control means and coordination mechanisms within the existing system

There can be some doubts about the full availability of mandatory industry stocks in the meaning of Article 3 of the present stocks directive in some Member States. Parts of the industry and some Member States have on several occasions proposed to overcome these by a reinforcement of public control on the availability of emergency stocks, including a reinforcement of verification means at the disposal of national and/or EU authorities.

According to the provisions of the directive in force, it is the Member States' responsibility to ensure control and supervision of stocks. However, administrations' ability and willingness to ensure effective control on mandatory industry stocks is varied (some do not carry out physical checks at all) and occasionally uncertain.

As regards release procedures, the need for increased coordination within the EU and between the EU and the IEA is sometimes raised in view of the fact that the current provisions for mere consultations of national releases via the Oil Supply Group may not be sufficient in an integrated internal market achieved by now in the EU.

In view of the above, this policy option would mainly entail:

- Audits performed by or on behalf of the Commission.[33] The auditors would be entitled to carry out on-site inspections of companies and other entities holding emergency stocks;

- Improvement of the EU's emergency management (including coordination through the Oil Supply Group).

- Regular reviews of Member States' emergency systems as well as identification of best practices related to crisis management and stock release.

4.3. Option 2: Establishing centralized EU system with mandatory state/public ownership of emergency stock

This option endeavours to address the problems identified in chapter 2 through a comprehensive reshaping of the existing legislation. The proposed option would decrease the current diversity of stockholding systems adopted by individual Member States through the introduction of an optimized common system. This option would largely follow the changes proposed in the earlier attempt to revise the stockholding legislation in 2002 (mentioned in section 2.1.1.), with the omission of its most controversial elements (increasing the obligation to 120 days and providing a possibility for market management using emergency stocks).

The most important elements of this option:

- The level of the stocks would continue to be 90 days but stocks should be owned in the form of physical oil or oil product by the government and managed as necessary by the government or a stockholding agency which is directly controlled by a national administration;

---

33 The Commission already has such powers in other sectors: the inspectors employed by Directorate I of DG Energy and Transport check nuclear facilities while DG Competition can carry out surprise inspections in the offices of companies.

- Member States would be free to establish joint stockholding entities together with other Member States in order to comply with the above obligation;

- At least part of the stocks should be in the form of products (as opposed to crude oil and other feedstock), ensuring supply even if refineries are disrupted; the composition of product stocks should reflect consumption patterns, with a focus on products the shortage of which may cause serious disturbances in the economic activity of the EU;

- Emergency stocks are to be stored separately from commercial stocks and are therefore clearly visible and fully available as supplementary oil in a crisis; moreover, it also facilitates effective control and swift reporting of stock levels;

- None of the concerned crude oil and products should be transferred, mortgaged, assigned, conveyed, charged, leased, pledged or otherwise encumbered, ensuring that they are fully at the disposal of Member States;

- Subject to the above conditions, stocks may be held in the territory of another Member State, without compromising prompt availability in a crisis;

- The use of "tickets" written by the oil industry is limited to the turnover of products for quality reasons (to prevent degradation or to comply with changing product specifications);

- Running costs could be financed by a levy included in the final consumer price of the oil products.

4.4. Option 3: Creating "dedicated" EU emergency stocks within a revised version of the existing system

This option would entail a revision of the current system in order to remove its main weaknesses other than possible constraints on the availability of stocks in time of crises. On top, the system would be amended to require Member States to maintain some part of their stockholding as compulsory government or agency stocks. The rest of the full stockholding obligation could be undertaken in any manner suitable to each Member State, including by leaving it to the industry, which could be partly covered by the minimum operational requirements (MOR).

Additional characteristics of this system would include:

- prohibiting that the emergency stocks be transferred, mortgaged, assigned, conveyed, charged, leased, pledged or otherwise encumbered;

- if an industry obligation is retained, giving the right to companies to delegate their obligation to the government or the agency, thereby not discriminating small and medium sized importers with no access to storage facilities;

- requesting to hold at least some product stocks;

- limiting the agencies' possibility to use tickets to those drawn against stocks satisfying the same requirements of government control in another Member State

- Member States would be free to resort to existing stockholding entities across the EU or to establish joint stockholding entities together with other Member States in order to comply with the obligation.

When defining this policy option, the Commission examined the practice of large IEA member countries, like the United States and Japan. In these countries part of the IEA obligation is covered by stocks held by the government and destined for use in more serious disruptions while the other part of the obligation is covered by the oil industry.[34] This provides a reasonable mix of dedicated emergency stocks with unquestionable availability and the more flexible stockholding arrangements of the industry. The Commission also looked into the lessons learned from recent disruptions which confirmed that industry stocks can be put on the market faster but government/agency stocks have better accountability.

The extent of the obligation to be held by the government or an agency was determined after investigating past disruptions and current stockholding practices. It was found that the largest disruption since the 1970s required 16 days of stocks to replace the disrupted oil. Therefore, a requirement to hold 90 days of "waterproof" government/agency stocks would be difficult to justify. At the same time, the survey of national stockholding systems in the EU showed that, on the average, 38% of emergency stocks are held by government or agency, which is equivalent to well over 40 days of consumption. Considering these findings, the proposed 30-day government/agency obligation seems to be a reasonable compromise.

Furthermore, a survey of storage costs in Member States refuted the common assertion that industry stockholding is cheaper (see Table 3 in section 5.3.1.).

4.5. Addressing the problems related to crisis management, calculation and reporting

Since the issues of crisis management, calculation (of stockholding obligation and compliance) and reporting are independent of the choice from the above options, it is proposed to tackle them in case of each option except the no policy change case (i.e. under each of Option 1, Option 2 and Option 3).

Calculation

In order to decrease administrative burden of Member States with membership in both the EU and the IEA, it is proposed to switch to the IEA methodology which is internationally accepted. Accordingly, the stockholding obligation will be based on the net import of oil, including both crude oil and oil products. It is however necessary to retain some of the obligation for oil producing countries as their production is also exposed to disruption, e.g. as a result of natural disasters, accidents or strikes. An abolition or significant reduction of their obligation would also weaken the emergency system as a whole and undermine the solidarity amongst Member States. (As a net oil exporter, Denmark has no stockholding obligation in the IEA regime, while the UK, as a marginal oil importer has a very low obligation. Romania is not a member of the IEA but would also face a lower obligation under the IEA regime.)

34 In the United States, the government-owned Strategic Petroleum Reserves hold stocks equivalent to nearly 60 days of net imports; the rest of the 90-day IEA obligation is covered by industry stocks. In Japan, government stocks amount to about 80 days of net imports and are complemented by 70 days of mandatory industry stocks.

It is also imperative to retain the obligation to hold a part of the stocks in the form of products. Product stocks serve as an instant remedy even if refineries would come to a halt. However, the extent of this obligation should not induce a significant change to current stockholding practices.

Regarding the date of compliance to the previous year's consumption/net imports, a reasonable compromise is to be sought between IEA rules (1 January) and EU rules (31 July) which would provide sufficient time for Member States to adjust stock levels to changing consumption/net imports.[35]

Reporting

Due to the low variation of emergency stock levels, there is no advantage in normal times in increasing the frequency of their reporting.[36] However, there is certainly scope for decreasing the long reporting lag. In case of a supply disruption it is particularly important to have up-to-date stock data.

Once the EU obligation is approximated to that of the IEA, the Monthly Oil and Natural Gas Statistics (MOS) or the JODI questionnaire would logically replace the current special questionnaire of the Commission used for the monthly reporting of emergency stock levels. The MOS questionnaire might need some fine-tuning so that it is fully in line with the updated EU rules (in particular, if additional rules are introduced compared to those of the IEA). Also, the definitions used in MOS have to be clarified in order for the data to be used in infringement procedures. These modifications can be carried out with comitology procedure.

In addition to the MOS questionnaire, it is also justifiable to demand additional information from Member States on the location and ownership of stocks, and on the measures taken to ensure their availability. Such reporting would help to verify that emergency stocks are at the full disposal of Member States. This is particularly important for emergency stocks held by the industry, often commingled with stocks held for commercial purposes. An annual periodicity of this reporting is probably sufficient.

Certain stakeholders argue that European commercial oil stock data should be reported and published more frequently than on a monthly basis and the ECOFIN Council reached a political agreement on the necessity of such reporting. Data on oil stocks is relevant as it provides an indication of the tightness of the market and could therefore have a significant influence on oil prices. Its relevance is suggested by the example and practice of large oil consuming countries (United States, Japan and possibly China and Korea) which report oil stocks on a weekly basis. Improved and more complete data on global oil stocks could contribute to improve oil market transparency. In order to better address the concerns of other stakeholders, further analysis of the issue and the US and Japanese example is necessary. The Commission will launch a feasibility study in order to review the costs, the benefits, the impacts on industry and possible modalities of weekly reporting, as well as the issue of confidentiality.

---

35 The IEA Secretariat expressed its readiness to find such a compromise.

36 Current monthly reporting is in line with the intentions of the IEA which plans to increase the frequency of examining compliance from quarterly to monthly.

Crisis management

For an effective crisis management within the EU, procedures are required for actions triggered by the IEA, as well as in case of regional/European crises not addressed by the IEA mechanism.

The IEA remains the main entity to deal with disruptions on the global scale. In an IEA action, EU Member States which are also members of the IEA should be able to release stocks without the Commission's explicit approval but should nevertheless consult the Commission. The Commission in turn, has to keep those Member States which are not members of the IEA informed, provide them with guidance and coordinate their participation in the action. For these countries trainings might be also necessary on how to respond to a specific supply disruption. The IEA could provide help in this respect. The role of the Commission should also include a responsibility for coordinating actions of all EU Member States, regardless of their status vis-à-vis the IEA, and this in the interest of providing a coherent reply and enhancing the effectiveness of any IEA action. At the same time, the Commission has to ensure that steps taken by the EU collectively or by way of individual Member State actions respect existing EU legislation.

If a (regional) disruption does not trigger an IEA action, a decision on an EU action is to be made in consultation with the Oil Supply Group. Nevertheless, information exchange with the IEA would be desirable even in such cases.

In order to enable swift action, decision making within the Commission should be streamlined in case of a crisis. It should be useful to nominate a "crisis manager", mandated to take appropriate action in case of a supply related crisis (e.g. convening the Oil Supply Group), interact with the IEA and enter into communications with other stakeholders (including press), without such decisions being delayed by the regular hierarchical approval procedure. The draft rules for an "Oil Crisis Management Task Force" to be set up within DG TREN have been prepared. This small and operational task force would execute the Commission's role in case of oil supply disruptions requiring action at EU level.

	Option 0: No policy change	Option 1: Reinforcing control	Option 2: Centralized system	Option 3: 30 days of dedicated stocks	
Total obligation	**90 days**	**90 days**	**90 days**	**90 days**	
				min. 30 days	**the rest**
Calculation basis	**consumption**	**net imports**			
Ownership of stocks	**no specific rule**	**no specific rule**	**government**	**government/agency**	**no specific rule**
Management of stockholding	**no specific rule**	**no specific rule**	**government or agency**	**agency or specific government control**	**no specific rule**
Commingling with commercial stocks	**Not explicitly prohibited**	**allowed**	**not allowed**	**not allowed**	**allowed**
"Tickets"	**no restriction**	**no restriction**	**limited**	**limited**	**"intermediated" (through agency)**
Minimum product share	**no**	**no**	**yes**	**yes**	**no**
Regular audits and reviews	**no**	**yes**	**no**	**no**	**no**
Reporting	**monthly, based on special questionnaire**	**monthly, based on MOS/JODI**			
Crisis management	**Consultation in the Oil Supply Group**	**Complementarity to the IEA emergency policies and measures, clear stock release mechanisms, increasing role of the Oil Supply Group for crisis management**			

Table 1: Summary of the policy options

5. WHAT ARE THE LIKELY ECONOMIC, SOCIAL AND ENVIRONMENTAL IMPACTS? HOW DO THE OPTIONS COMPARE?

The four options have been assessed on the basis of their most important likely impacts:

- impact on emergency preparedness, i.e. the capacity of the EU to cope with a possible oil supply disruption,
- financial and administrative burden faced by Member States, the industry and the Commission,
- environmental, social and economic impacts.

The impact analysis of the individual options is complicated by the fact that the transposition of the existing legislation has created important differences between the Member States' stockholding systems. Member States have opted for different regimes and have dedicated unequal costs and efforts to the compliance with their obligations. As a result, the impacts of the individual options will be inevitably different across Member States, primarily depending on whether stocks are currently maintained predominantly by public agencies/governments or by the industry. The way of implementing the possible options (e.g. how government or agency stockholding would be financed) is also likely to affect the impacts, especially with respect to the size and focus of the financial burden[37].

The above factors make it very difficult to quantify the impacts. As the policy options refer mainly to changes in the organisation and national management of the stockholding systems, a correct quantification of impacts across the EU proves hardly possible. Therefore, a more detailed, qualitative analysis was preferred. Nevertheless, approximate numerical data are provided where possible.

Not only it is difficult to quantify the costs, the quantification of benefits is probably even more challenging. The current system was never put to a real test by a large-scale disruption (even the IEA collective action after hurricane Katrina in 2005 used only 2.5 days of stocks out of 90) so we have limited knowledge on the potential consequences of a major supply disruption on the economy and the society, and to what extent these can be avoided or mitigated by using emergency stocks. Nevertheless, in section 5.1. an attempt is made to specify the potential impacts of a disruption.

5.1. Potential impacts of a supply disruption

Emergency oil stocks provide benefits to the economy. The principal benefit is the avoidance of economic losses in case of a supply disruption, due to the ability of stocks to replace missing supplies and thereby to dampen or eliminate potential price hikes.

An oil supply disruption is likely to have serious negative impacts on the economy, depending on the relative size and the duration of the disruption. Some sectors are particularly dependent on the regular supply of oil and/or petroleum products. Transport is by far the biggest user of oil in the EU (see Figure 3) and oil accounts for 97% of energy consumption in this sector. Households spend 13.6% of their total final consumption on transport, mostly by road and air,

37 If stockholding is financed by a levy imposed on the final consumer, impact on the government budget can be largely avoided. In contrast, financing through public expenditure would either reduce other public expenditure or result in increased taxes.

i.e. transport modes most dependent on oil-based fuels. Part of this expenditure is discretionary (holidays, leisure travel) but an important part is underpinning more than just contemporary lifestyle, ensuring social organization and adequate labour force mobility on which modern EU economy depends.

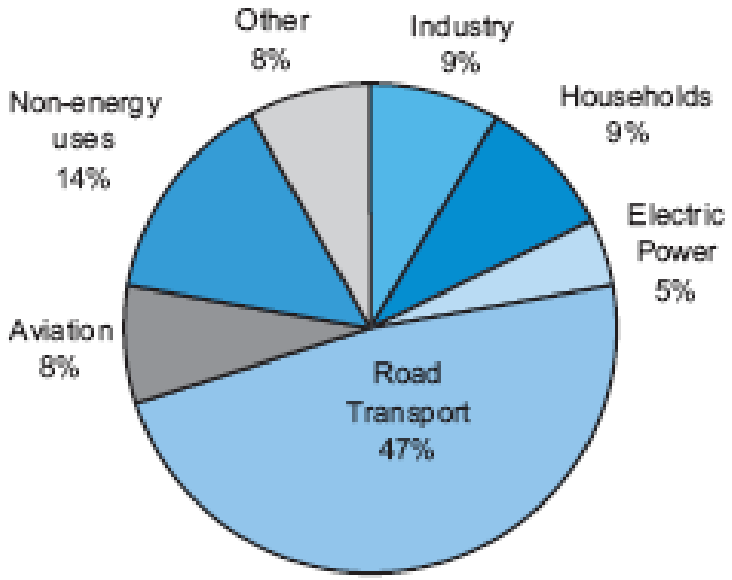

Figure 3: Petroleum products use by sector, 2004

Source: Eurostat

In the chemical industry, oil is the main feedstock and energy source at the same time. In the fisheries sector, at current price levels, fuel costs constitute more than 30% of the value of EU fish landings. Oil-based fuels (mainly heavy fuel oil) play a limited role in the electricity sector – in 2005 they accounted for 4.2% of power production in the EU. Nevertheless, in countries such as Greece, Ireland, Italy and Portugal, power supply depends 13-19% on oil-fired power plants while the sector in Cyprus and Malta is practically completely dependent on oil.

This underlines the importance of regular and integral supplies of oil and petroleum products to the economy. The principal role of emergency stocks is to ensure such integral supplies at times of crises and/or disruptions, particularly in cases where the severity of situation may lead to a temporary suspension of trading on the local or even global oil markets either due to technical reasons or because of physical unavailability of needed oil volumes.

The damage to the economy that could be caused in such situations without the possibility of drawing on emergency stocks is intuitively understood but hard to quantify precisely. If we had no emergency stocks to replace disrupted volumes, this would first and foremost bring most of the transport to a standstill which is in itself an important economic sector[38]. In addition, the lack of oil would also paralyse the activities of other sectors like the chemical industry. Considering the important role of transport in modern society and economy, other

38 Enterprises with transport services as their main activity employed 8.2 million persons and generated EUR 363 billion value added in 2004, accounting for an estimated 6.9 % and 7.3 % respectively of the EU's total non-financial business economy (Panorama of Transport, Eurostat, 2007)

sectors would be also seriously affected. The impact on households, especially those using heating oil, would be immense as well.

However, there is hardly any quantitative analysis on the potential impact of a large-scale supply disruption which, in addition to skyrocketing prices, would result in a lack or scarcity of oil. In fact, there is hardly any experience of such disruptions to date. Even during the first oil crisis in 1973, when the Arab oil producers enforced an embargo against the Netherlands and the United States, and other countries also faced partial cutbacks, there was no real shortage of supply and it is more correct to refer to it as an oil price shock (the price of oil quadrupled by 1974).

The potential damage to the economy and society from an oil supply disruption therefore has in practice to be gauged by analysing a case of a sudden price increase of the kind that could be associated with any unmitigated supply disruption. This impact could be considered an assessment of a minimum damage level. Effective damage from a physical disruption would be somewhere above that level, taking into account that the sudden price hike would be coupled with further economic losses stemming from actual physical unavailability of oil supplies.

There is indeed a wealth of analysis on the impact of increasing oil prices on the economy. Already after the second oil shock in 1980s, James Hamilton published an influential article demonstrating that an oil price increase had preceded all but one recession (that in 1960) in the United States since the end of World War II.[39] More recently, the IEA's World Energy Outlook 2005 claimed that a $10 rise in the oil price, if sustained for a year, would cut GDP in OECD countries by 0.4%.

In 2008, the Commission also investigated the issue of the macroeconomic impact of oil prices, based on the simulations of ECFIN's QUEST model.[40] The results show that the impact of an increase in oil prices of 100% over a period of three years would decrease GDP by 0.9% below baseline after three years and slightly more than 1% after 10 years. Considering the current size of the EU GDP, this is equivalent to a GDP loss of about €120 billion. This loss would be unevenly spread; in some sectors (e.g. some segments of the transport sector), fuel costs can represent up to 50% of income and these sectors would obviously suffer the most.

The impact on consumption according to the model is much stronger, 2% lower after three years and 3% lower after 10 years. Consumer prices are 2% higher after three years than in the baseline scenario. The increase in energy prices does not have a significant impact on energy consumption in the short run due to the small short-run elasticities of substitution, but energy consumption by households is 6% lower after ten years.

A second scenario takes the previous simulation as a new baseline and shows the effects of a further oil price increase of 25%. In this case the negative impact on real GDP is around 0.2% in the first year, rising to 0.7% after 10 years. This implies that, proportionally, the effect of oil price shocks is non-linear, i.e. larger when the starting price level is higher. This is an important conclusion considering that a supply disruption resulting in physical shortage of oil

39 Hamilton, J. D. (1983) “Oil and the Macroeconomy since World War II,” Journal of Political Economy 91: 228-248.

40 Results were published in the Quarterly Report on the Euro Area, Volume 7 N° 1 (2008) (http://ec.europa.eu/economy_finance/publications/publication_summary12329_en.htm).

or petroleum products (if not countervailed by emergency stocks releases) would be likely to lead to a temporary price hike with unavoidable price overshooting. Indeed, the price rises caused by the 1973 oil shock had a much greater impact on the economy than the temporary fuel shortage caused by the embargo: oil importing countries saw sudden inflation and economic recession.

5.2. Impact on the EU's capacity to effectively react to an emergency

The first criterion to be used when comparing the various policy options should be their impact on the EU's ability to cope with an oil supply disruption, i.e. the extent to which the option can improve the security of supply. In this respect it is important to emphasize that emergency stocks should only be used in a severe supply disruption and should provide the system with "fresh", additional oil by replacing the disrupted volume. At least this should provide a buffer to avoid or to mitigate negative impacts to the economy.

5.2.1. Option 0: No policy change

Option 0 would mean that the weaknesses of the current system would remain in place, putting at risk the EU's ability to react to, and ultimately withstand, possible adverse developments. This could have more serious consequences in the future given that the risk of supply disruptions might be higher in the future than in the past (as described in section 2.2.1.). Oil production in the future may not keep pace with higher oil demand from countries outside the OECD like China, India or Middle East countries[41]. As a result, even if a global shortage of oil is not imminent, spare capacities are likely to decline and even smaller oil supply disruptions may have a stronger impact in the future than they had in the past.

Shortcomings of the current system have been outlined in chapter 2 and can be further analyzed. In this context, the main point determining the impact of oil stocks on security of supply is not the amount of emergency stocks held but the volume of stocks which can really be available in a crisis and the certainty of their availability.

A stockholding system which relies on government or agency stocks and in which public/state ownership of stocks is compulsory may have the full amount of 90 days at its disposal. This oil is usually very visible because of dedicated storage tanks or underground facilities. This oil is in a crisis available as "fresh", additional oil which has not yet been linked to the existing commercial system.

A stockholding system which relies on mandatory industry stockholding may have less oil available in final analysis, as emergency stocks are typically commingled in such system with businesses' Minimum Operational Requirements (MOR). In a disruption, businesses will use MOR to maintain their operations, reducing the amount of stocks that can be considered as additional emergency stocks available for the state administration's use.

A survey undertaken by the Commission in early 2007 in the context of this impact assessment yielded data on the breakdown of emergency stock held in the EU by the character of stockholding entity as shown in Figure 5. In three EU Member States, all stocks were held

41 The latest (July 2008) Medium-Term Oil Market Report of the IEA warns of increasing market tightness beyond 2010, with OPEC spare capacity declining to minimal levels by 2013

by the government or an agency. In eight, all stocks were held by the oil companies[42], while the majority of Member States had a mixed system. The survey has also showed a huge variety in MOR ranging from 2 to 94 days of domestic consumption (see Figure 6)[43].

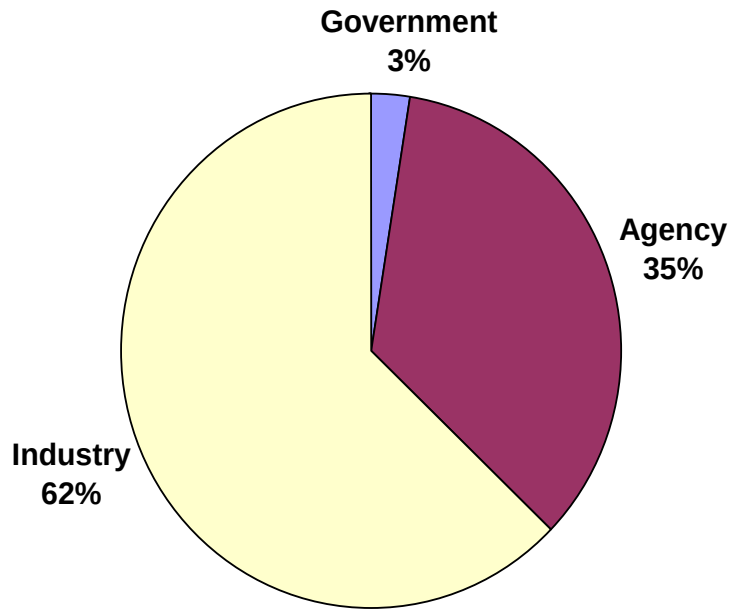

Figure 5: Share of Emergency Stock Volumes Held by Governments, Agencies and the Industry

Source: European Commission DG TREN

42 In the meantime, Belgium has established a stockholding agency. In Austria and Denmark, most of the emergency stocks are held by a privately owned stockholding entity which can be regarded as an agency.

43 This was an informative questionnaire which did not provide a precise definition of MOR and thus allowed for flexible interpretation of what counts for MOR.

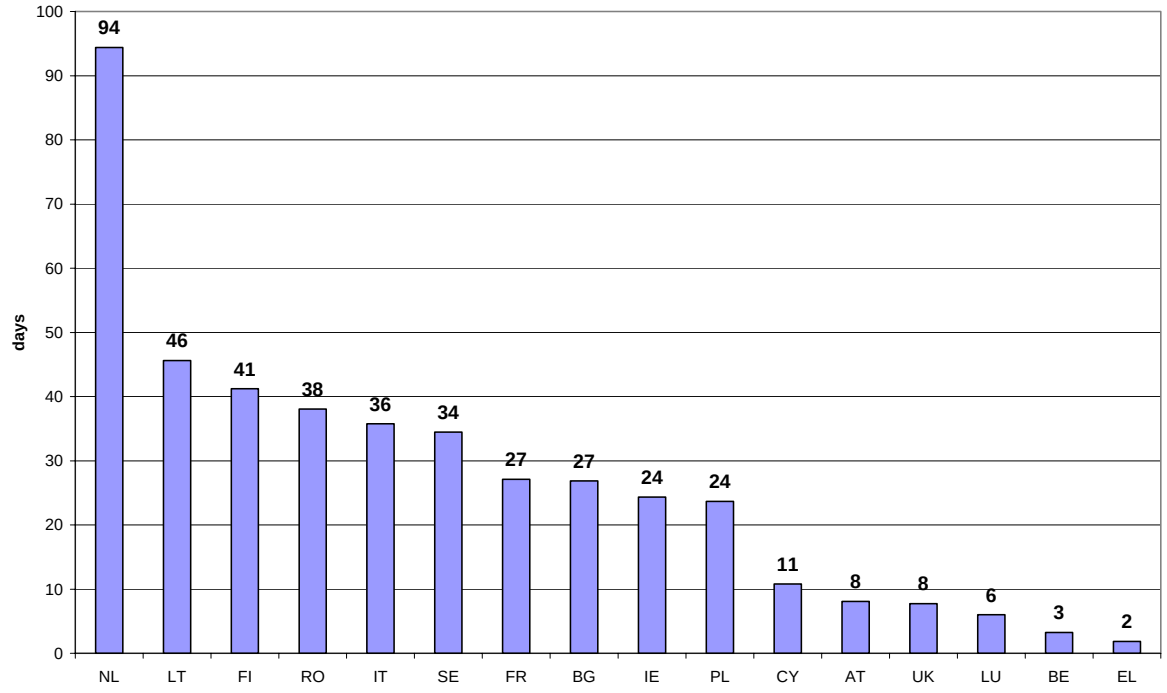

Figure 6: MOR Expressed in Days of Consumption[44]

Source: European Commission DG TREN

Furthermore, and as already touched upon in chapter 2, current rules and practices regarding the use of "tickets" may lead to further limitations on the capacity of the current system to act adequately in a supply disruption. Yet, Member States hold according to data collected in the aforementioned survey about 18 million tons of oil and oil products in the form of "tickets", which represents an 11% share of the overall emergency stocks. Ten Member States do not hold or do not permit "tickets" to be held while eight Member States hold more than 20% of their stocks in "tickets" (see Figure 7). Almost half of such stocks are located abroad. 70% of "tickets" are held by the industry, 30% by agencies.

44 Only Member States where part of the stocks are held by the industry were requested to answer this question; still, some of these countries did not provide data.

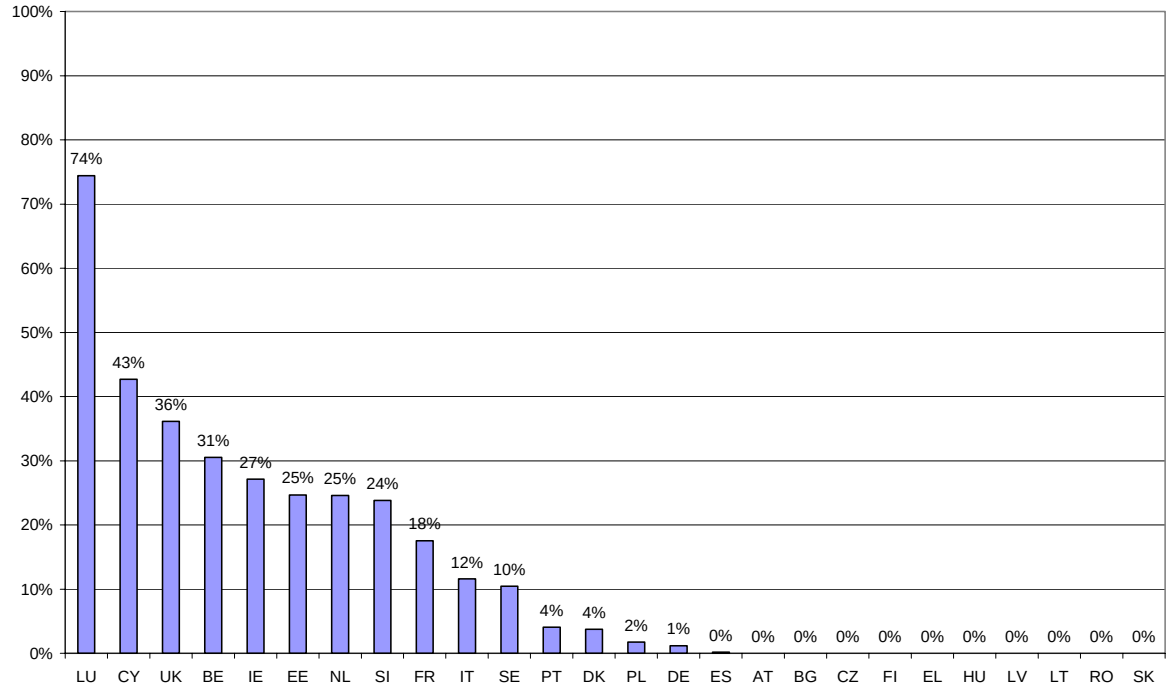

Figure 7: Share of "Ticket" Stocks in EU Member States

Source: European Commission DG TREN

All the above is likely to lead to a situation whereby in a severe supply disruption some of the EU Member States' emergency stocks may not be as fully available as Article 3 of Directive 2006/67/EC stipulates. In a first step this would impact the solidarity of Member States to act on an equal basis in a supply disruption. It would require those Member States complying with Article 3 to take a larger burden and to allow room for "free-riding" of other Member States. In a severe and long lasting supply disruption this could negatively impact the effectiveness of the whole emergency and stock draw system.

Other issues which can impact negatively on the effectiveness of the EU's capability to act adequately in a supply disruption are linked to crisis management issues, to insufficient linkages to the IEA and to the fact that most of the new Member States are not members of the IEA and are therefore not included in the globally working oil emergency response system.

5.2.2. Option 1: Reinforcing control means and coordination mechanisms within the existing system

Option 1, i.e. the option to reinforce public control by giving the Commission a role for special inspections/audits may definitely increase the credibility of the system, at least in the long run. Country reviews, carried out in conjunction with the IEA, would help to identify shortcomings of national stockholding systems and to disseminate best practices. Inspections

could identify countries which may formally comply with the 90 day obligation but whose effective stock levels may be lower or not fully available to the administration[45].

If several countries would prove to be non-compliant, this would lead to a number of infringement procedures, possibly undermining the credibility of European emergency stocks. It could take several years to achieve compliance and restore credibility. Increased control could also help to avoid illegal practices with "tickets" and/or stocks held abroad (e.g. double reporting of the same molecules).

However, even a fully ensured and strict compliance with the provisions of the existing legislation coupled with improved release mechanisms guaranteeing proper and effective coordination would not remove the structural mismatches of the current system.

One of such mismatches concerns the composition of emergency stocks. Analysis of inland deliveries and emergency stocks of petroleum products in the EU shows that current product categories cover only 81% of consumption (see Figure 8). It was also found that the coverage of jet fuel is relatively low (7% of product stocks as opposed to 10% of consumption) while fuel oil stocks are disproportionately high (19% of product stocks while only 7% of consumption).

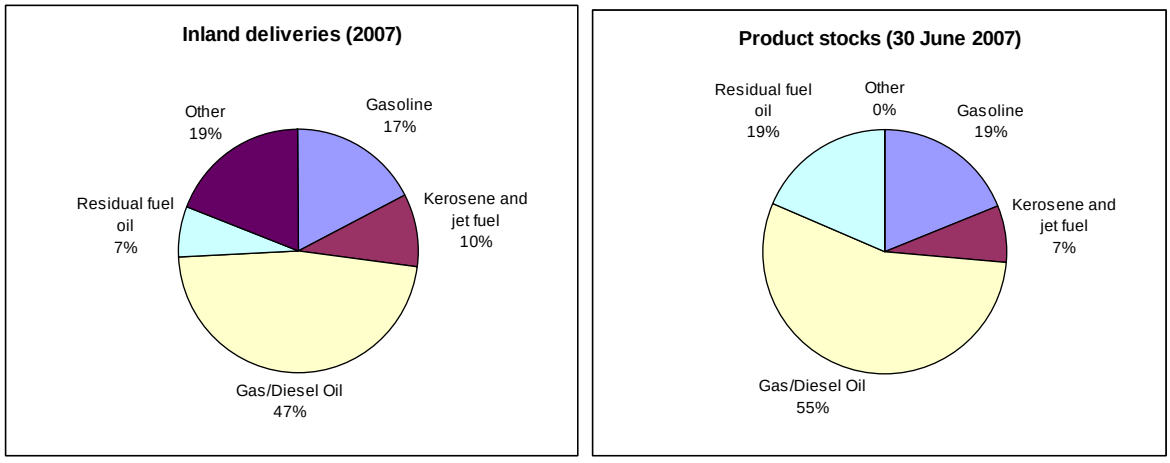

Figure 8: Composition of oil product consumption and of product stocks in the EU-27

Source: Eurostat, DG TREN

Moreover, even full enforcement of current rules would not insulate the existing system from risks associated with current practices on "tickets". Even with full transparency and accountability of tickets, logistic problems may intervene and undermine the possibility of using stocks held under "ticket" arrangements in a prompt manner in times of supply crises. For the most extreme example, a local supply disruption in Cyprus could be addressed only with difficulty by using stocks located in Finland, unless a swap[46] can be arranged. Moreover, if the coverage for "tickets" is in the form of crude oil or blending components (e.g. naphtha to be used for gasoline production), this also calls the prompt availability of products into question.

45 Such cases could indeed be revealed by in-depth inspections. For example, the case of Belgium showed that, after switching from mandatory industry stockholding to an agency system, the newly created agency failed to collect the stocks (e.g. by way of "tickets") previously reported by the country, resulting in a non-compliance in Category II.

46 In a geographical swap stocks in different locations are exchanged.

5.2.3. Option 2: Establishing centralized EU system with mandatory state/public ownership of emergency stocks

Stocks owned directly by Member States are easy to monitor since they are held by a single entity and commingling with commercial stocks is avoided. Furthermore, stocks held by the industry as part of their assets are established in line with their commercial strategies and contractual obligations and are primarily meant to be used for generating profit – in a supply disruption, public and commercial interests may not coincide and may even become contradictory.[47] The quality (availability) of stocks would thus definitely increase as they would be separated from any commercial stocks and be fully dedicated to emergency purposes. Each Member State would have 90 days of "fresh oil" for use in an emergency. This option would thus delete possible "free rider" positions and avoid current distortions between Member States deriving from the fact that the costs and the level of oil security vary too much from one country to another.

It is also easy to monitor the volume of stocks released (usually by means of tenders), which is not the case if emergency stocks are held by the industry (usually "released" by decreasing the stockholding obligation).

This option thus can be seen as considerably improving the capability and effectiveness of the whole EU emergency response system. For the purposes of comparison of this option with others, particularly the next/last one, it may be useful to consider the effective coverage this option would provide.

The calculations of the IEA show that public stocks alone (the availability of which is not questioned) held by IEA member countries would last for about 2 years in case of a continuous stockdraw of 2 million barrels per day (see Figure 9). This is equivalent to the stock release rate of the 2005 IEA action, although the latter lasted for less then four months. The sufficiency of the 90-day obligation might depend, on the one hand, on the availability of the emergency stocks and, on the other hand, on the risks of an oil supply disruption and particularly its possible extent and duration.

47 For companies it might make economic sense to make use of the emergency stocks for commercial operations and neglect their stockholding obligation, even if this entails penalties. In anticipation of increasing prices, companies might be also inclined to opt for holding on to stocks instead of alleviating the shortage by releasing them.

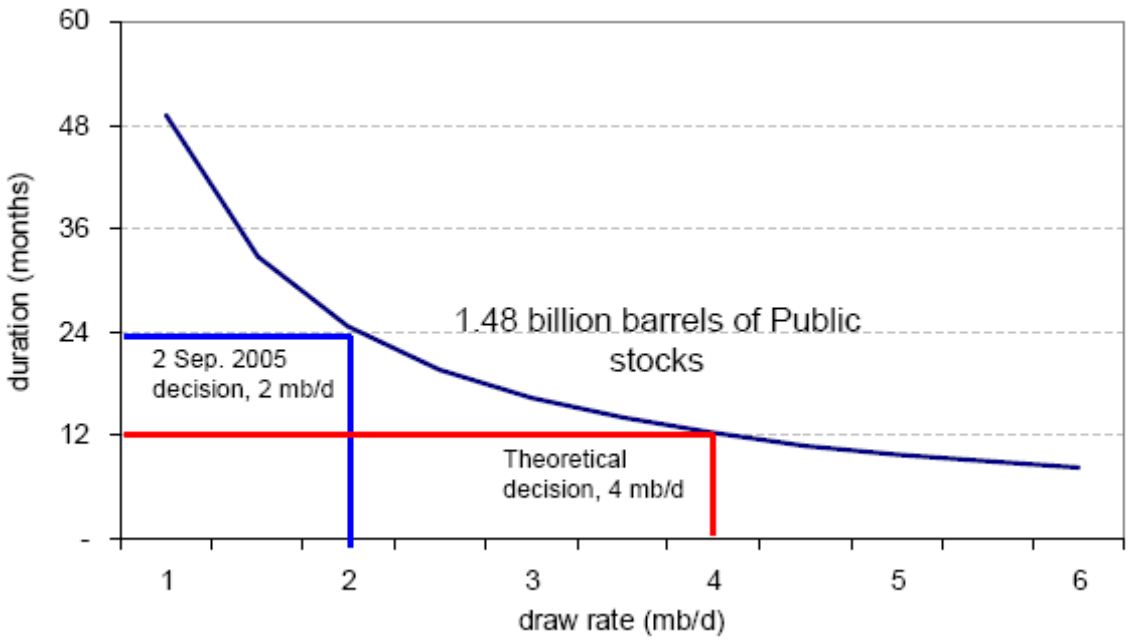

Figure 9: The Ability of IEA Public Stocks to Replace 2 or 4 mbpd of Disrupted Oil

Source: IEA

5.2.4. Option 3: Creating "dedicated" EU emergency stocks within a revised version of the existing system

Judging on past experience, even the biggest disruptions experienced to date required the deployment of much less emergency stocks than the 90-day obligation (see Table 2). This option would thus seek to improve the availability of emergency stocks by establishing a minimum level of dedicated emergency stocks which is sufficient to cover, with sufficient margin, even the most serious disruptions experienced in previous decades.

Date	No. of days	Gross supply loss (mbpd)	% of world oil demand	Days of stocks needed[48]	Reason
5/70-1/71	270	1.3	2.5	7	Libyan price controversy
4/71-8/71	150	0.6	1.1	2	Algeria-France nationalisation dispute
3/73-5/73	90	0.5	0.8	1	Lebanon civil unrest
10/73-3/74	180	4.3	7.1	13	Arab-Israeli War & Arab oil embargo
5/77	30	0.7	1.1	0	Accident at Saudi oilfield
11/78-4/79	180	5.6	8.5	15	Iranian Revolution
10/80-1/81	120	4.1	6.2	7	Outbreak of Iran-Iraq War
4/89-6/89	90	0.5	0.8	1	UK Cormorant platform accident
8/90-1/91	180	4.3	6.5	12	Iraqi invasion of Kuwait
4/99-3/00	360	3.3	4.5	16	OPEC production cutbacks
11-12/99	60	1.1	1.5	1	Iraqi oil export suspension (rejection of phase V1 extension)
12/00	30	1.6	2.1	1	Iraqi oil export suspension (price disagreement with UN)
6-7/01	60	2.1	2.7	2	Iraqi oil export suspension (rejection of UN resolution 1352)
4-5/02	60	1.8	2.3	1	Iraqi oil export suspension (rejection of UN resolution 1352)
12/02-3/03	120	2.6	3.4	4	Venezuelan strike
3/03-12/03	300	2.3	2.9	9	Iraqi conflict
9-12/05	120	1.5	1.9	2	Katrina Hurricane damage to US crude oil production facilities

Table 2: Major Oil Supply Disruptions since 1970

Source: IEA World Energy Outlook 2005

These stocks would be separated from commercial stocks and, as a result, would be clearly visible and fully and surely available as supplementary oil in a crisis. Obliging Member States to hold a minimum of 30 days under a system managed through a state-controlled agency would improve the preparedness of the EU in practical terms equally as option 2.

This option is also in line with the practice of the United States where the government-owned Strategic Petroleum Reserves (SPR) hold stocks equivalent to nearly 60 days of net oil imports while the rest of the 90-day IEA obligation is held by the industry.

48 Number of days of stocks needed to replace the disrupted oil [This calculation assumes that all consuming countries dispose of emergency stocks which is obviously not the case; basically the OECD countries have to replace all the missing oil whilst in 2004 they consumed 58% of oil.]

5.3. Financial and administrative impacts

In addition to the impact on emergency preparedness, the impact on financial and administrative burden has to be taken into account as well. Member States, the oil industry and the Commission may all face additional (or possibly lower) financial or administrative burden depending on the policy option chosen.

Any additional burden imposed by the amendment of the current legislation should be proportional to the additional benefit provided in terms of better emergency preparedness. In addition, the amendment should not contradict the endeavour of the Commission and a number of Member States to simplify existing legislation. Also, disproportionate financial burden should be avoided.

5.3.1. Option 0: No policy change

Option 0 implies no change to the current financial and administrative burden. A survey undertaken by DG TREN in the context of this impact assessment revealed that, on average, it costs Member States 31 €/ton/year to maintain their emergency stocks (see Table 3).

Country	Government/agency stocks		Industry stocks		Total	
	Costs (€/t)	Stock level (kt)	Costs (€/t)	Stock level (kt)	Costs (€/t)	Stock level (kt)
AT	31	3 400			31	3 400
BE	20	1 880			20	1 880
BG	625	161	1 124	170	881	331
CY	50	280			50	280
CZ	24	2 000			24	2 000
DE	18	22 300			18	22 300
EE	323	95			323	95
ES	27	6 094			27	6 094
FI	2	3 600			2	3 600
FR	29	13 076			29	13 076
HU	49	1 240			49	1 240
IE	40	927			40	927
IT			39	17 389	39	17 389
LT	77	200	146	136	105	336
LU			25	750	25	750
NL	19	4 260			19	4 260
PT	34	1 082			34	1 082
SE			35-50	4 081	35-50	4 081
SI	43	549			43	549
SK	19	512			19	512
Total	25	61 656	48	22 526	31	84 182

Table 3: Costs of emergency stockholding in Member States (2007)

Source: European Commission, DG TREN

Emergency stockholding entails one-off costs (buying stocks, building storage facilities) and running costs (renting storage facilities, ticket fees etc.). The high costs faced by some new Member States reflect the fact that these countries are still building up their emergency stocks and therefore incur significant one-off stocks. Such stocks can be minimized by using "tickets" or by buying stocks on credit and storing them in rented facilities.

5.3.2. Option 1: Reinforcing control means and coordination mechanisms within the existing system

Option 1 does not envisage changes in the requirements for stock ownership or management, so it is not expected to entail supplementary costs for the administration or the industry of the Member States. However, additional costs would certainly occur as a result of the audits and reviews foreseen under this option (auditors, missions, meetings).

Audits would not necessarily require additional Commission staff. It might be more beneficial and cost-efficient to mandate external auditors as this task requires special expertise in both accounting and oil issues, and only a limited number (3-6) of reviews can be foreseen each year. The estimated cost of a comprehensive audit of a single country is in the order of € 50,000. This estimate was confirmed by a medium-sized Member State which mandates external auditors to carry out yearly audits of companies with a stockholding obligation and the total costs are of this order of magnitude.

Country reviews, on the other hand, even if carried out together with the IEA, would probably necessitate the expansion of Commission staff. Depending on the results of the audits and reviews, the number of infringement procedures might also increase.

Specific costs to be born by Member States or the oil industry could only be determined if the audit would detect serious faults on Member States' compliance with stockholding obligations.

5.3.3. Option 2: Establishing centralized EU system with mandatory state/public ownership of emergency stocks

Financial and administrative requirements of this option would vary significantly across Member States. This is a consequence of the current diversity of stockholding systems which is described schematically in Table 4.

Member State	EU Membership	IEA Membership	Stockholding system
Austria	1995	1974	Agency/Industry
Belgium	1957	1974	Agency/Industry
Bulgaria	2007	-	Government/Industry
Cyprus	2004	-	Agency/Industry
Czech Republic	2004	2001	Government
Denmark	1973	1974	Agency/Industry
Estonia	2004	-	Agency/Industry
Finland	1995	1992	Agency/Industry
France	1957	1992	Agency/Industry
Germany	1957	1974	Agency
Greece	1981	1977	Industry
Hungary	2004	1997	Agency
Ireland	1973	1974	Industry/Government
Italy	1957	1974	Industry
Latvia	2004	-	Agency/Industry
Lithuania	2004	-	Government/Industry
Luxembourg	1957	1974	Industry
Malta[49]	2004	-	
Netherlands	1957	1974	Agency/Industry
Poland	2004	2008	Industry/Government
Portugal	1986	1981	Agency/Industry
Romania	2007	-	Industry/Government
Slovakia	2004	2007	Government
Slovenia	2004	-	Agency
Spain	1986	1974	Agency/Industry
Sweden	1995	1974	Industry
United Kingdom	1973	1974	Industry

Table 4: Current stockholding systems of EU Member States

Source: Oil Supply Security (IEA, 2007), Commission survey

For most Member States this option would entail a major change to the current system and – depending on the practical implementation – this might have an impact on the financial burden. In summary:

– Six EU Member States (BG, CZ, LT, PL, RO, SK) dispose at present of government-held stocks, representing less than 3% of EU emergency oil stocks.

– Only two of these countries, the Czech Republic and Slovakia hold all emergency stocks under such a regime. For these two countries, Option 2 is not likely to cause major organisational changes or additional financial burden.

49 Malta did not answer to the Commission survey.

– Five Member States (EL, IT, LU, SE, UK) completely rely on mandatory industry stocks today. These countries would also need to purchase emergency stocks and might have to establish agencies to manage them.[50]

– All other Member States (AT, BE, BG, CY, DE, DK, EE, EI, ES, FR, HU, IE, LT, LV, NL, PL, PT, RO, SI) have some government or agency stocks in their present systems. However, only a few of them have the full 90 days of stocks at their disposal, under conditions approaching the model envisaged under this option. Even in Member States with agencies, stocks are often not state-owned, so do not comply with the requirements of this option.

The cost of buying oil for reaching the 90 day level required for emergency stocks at EU level (about 135 million tons in crude oil equivalent), at current market prices (about $70/barrel in the second half of October 2008) could be of the order of €55 billion. If part of these stocks would be in the form of products, costs would be obviously even higher. These costs could be financed either by the taxpayer through the government budget (either through higher taxes or by reallocating public expenditure) or directly by the consumer (through a levy). Bank loans could be used as well for covering the initial costs. In addition to buying the stocks, building new storage facilities to hold the physical crude oil and products might be also necessary. The mode of financing such facilities would be similar to that of purchasing oil stocks.

It should be emphasized that switching to a direct government ownership and agency system does not entail automatically a significant increase of running costs. Costs of building storage facilities, buying and storing stocks should not be essentially higher if the stocks are owned by the Member State instead of the oil industry. This is confirmed by a recent survey, the results of which show that the average costs of government/agency stocks are actually lower than those of industry stockholding (see Table 3). Lower costs can be explained by the fact that these entities are not profit-oriented and usually have access to credits at favourable terms (often helped by state guarantee). Managing an agency certainly involves some administrative costs but these are almost negligible compared to the costs related to physical stockholding: the survey mentioned above found that it adds up to 1.5% of total stockholding costs (see Figure 10).

50 Italy established a stockholding agency in 1998 which is not operational for the time being. The Swedish Energy Agency has a role in supervising emergency stocks but is not responsible for holding the stocks.

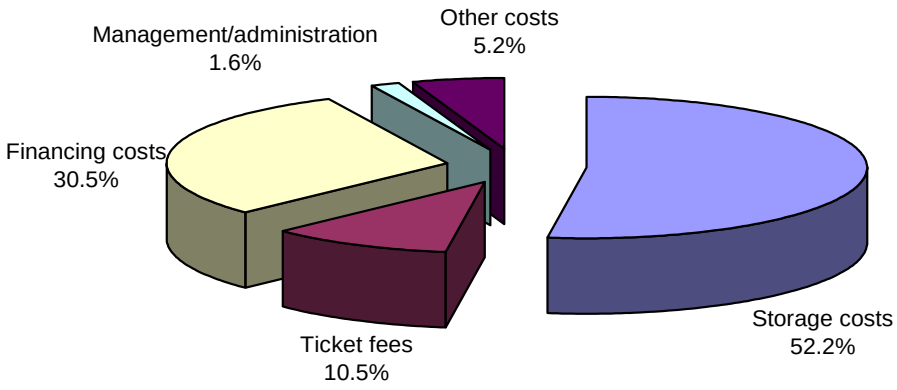

Figure 10: Cost structure of government/agency stocks

Source: European Commission, DG TREN

If emergency stocks are held by the industry, costs are obviously incorporated into consumer prices. Unless financed by taxpayers, this would not change in case of state-owned stockholdings but, by establishing a special fee incorporated into price, the costs would be more apparent, thereby increasing transparency.

The burden on the industry in the countries concerned would substantially ease: they would no longer face an obligation to hold stocks and to report the level of such stocks. In fact, they could realize a huge one-off (windfall) profit by selling their emergency stocks. Nevertheless, it has to be emphasized that even if all emergency stocks are state-owned and managed by the government or agencies, Member States cannot cope with a disruption without the industry and its logistic system. The industry may also have a role in collecting a fee from consumers to finance the stockholding system.

If all stocks are managed by the government or a single agency (instead of a number of companies), administrative burden in terms of reporting is likely to moderate.

5.3.4. Option 3: Creating "dedicated" EU emergency stocks within a revised version of the existing system

Option 3 could entail additional financial burden for a number Member States, but this should be much lower than in Option 2 and it would concern fewer countries. In fact, many Member States may be reasonably close to complying with the obligations entailed in this option.

Similarly to Option 2, the financial burden on Member States will depend on how close their current system is to the proposed one and on the decision of how it will be financed. The estimated impact on individual Member States' stockholding is presented in Table 5. The calculation takes the proposed alignment with the IEA methodology into account.

MS	Stock levels on 30/11/2006[1]									2008 obligation in coe[2]	1/3 of the obligation[3]	Government/ agency stocks in coe[4]	"Missing" gov./agency stocks	
	Government+agency			Industry			Total							
	crude	products	total	crude	products	total	crude	products	total				in 1000t	in %
AT				1 655	1 524	3 179	1 655	1 524	3 179	3 120	1 040	0	1 040	100%
BE				1 313	3 005	4 318	1 313	3 005	4 318	4 439	1 480	0	1 480	100%
BG	98	95	192	0	122	122	98	217	314	1 235	412	190	222	54%
CY	0	297	297	0	101	101	0	398	398	688	229	321	0	0%
CZ	916	1 024	1 940				916	1 024	1 940	2 138	713	1 931	0	0%
DK				544	2 225	2 768	544	2 225	2 768	1 424	475	0	475	100%
EE	0	50	50	0	47	47	0	97	97	210	70	54	16	23%
FI	300	1 050	1 350	1 067	979	2 046	1 367	2 029	3 396	2 415	805	1 404	0	0%
FR	2 695	10 126	12 822	4 664	3 968	8 632	7 359	14 095	21 454	20 010	6 670	13 362	0	0%
DE	14 112	11 243	25 355	4 909	3 833	8 742	19 021	15 076	34 097	23 119	7 706	24 843	0	0%
EL				2 064	3 110	5 174	2 064	3 110	5 174	4 051	1 350	0	1 350	100%
HU	547	644	1 192	0	213	213	547	857	1 404	1 189	396	1 188	0	0%
IE	0	1 605	1 605	250	799	1 049	250	2 404	2 654	2 068	689	1 733	0	0%
IT				5 966	12 779	18 745	5 966	12 779	18 745	17 818	5 939	0	5 939	100%
LV	0	12	12	0	143	143	0	154	154	414	138	13	125	91%
LT	0	190	190	9	113	122	9	303	312	523	174	205	0	0%
LU				0	753	753	0	753	753	756	252	0	252	100%
MT	NA	NA	NA	NA	NA	NA	NA	NA	NA	270	90	NA	NA	NA
NL	2 419	1 551	3 970	5 176	397	5 573	7 595	1 948	9 543	4 959	1 653	3 852	0	0%
PL	663	157	820	1 618	1 185	2 803	2 281	1 342	3 623	5 397	1 799	766	1 033	57%
PT	777	1 068	1 845	798	2 419	3 218	1 576	3 487	5 063	3 042	1 014	1 853	0	0%
RO	0	476	476	366	241	606	366	717	1 082	1 741	580	514	66	11%
SK	276	223	499				276	223	499	687	229	489	0	0%
SI	0	442	442				0	442	442	682	227	477	0	0%
ES	1 954	3 459	5 413	4 738	6 778	11 516	6 692	10 237	16 930	16 597	5 532	5 495	38	1%
SE				1 219	3 081	4 300	1 219	3 081	4 300	2 908	969	0	969	100%
UK				8 225	6 328	14 553	8 225	6 328	14 553	11 934	3 978	0	3 978	100%
Total	24 759	33 712	58 471	44 580	54 142	98 723	69 339	87 854	157 193	133 834	44 611	58 692	16 982	`

Table 5: Estimated impact of option 4 on Member States' stockholding obligation (in 1000 tons)

[1]composition of emergency stocks as reported by Member States in an ad hoc questionnaire (Malta did not answer) [2]estimated obligation in crude oil equivalent after the proposed alignment with IEA rules (in case of Denmark, Romania, and the United Kingdom this corresponds to 67.5 days of domestic consumption, in case of other IEA member countries it is the actual IEA obligation, in case of Malta it is an estimation based on average difference between EU and IEA obligations, in case of other countries it is calculated based on MOS data) [3]this corresponds to the proposed 30-day obligation [4]Stocks held by government or agency on 30/11/2006 recalculated into crude oil equivalents, with a 10% deduction

According to the calculations, about half of the Member States (CY, CZ, FI, FR, DE, HU, IE, LT, NL, PT, SK, SI) would practically be compliant with such a modified obligation as they have dedicated emergency stocks (held by government, agency or other entity) covering more than 30 days. In addition, all these countries have at least 30 days of dedicated stocks in the form of products. Meanwhile Belgium has established agency stocks so most probably it would be also compliant. In case of Austria and Denmark, most stocks are held by a privately owned stockholding entity; these arrangements might need some improvement but by and large appear to be compliant as well.

Based on the November 2006 stock levels, six Member States (BG, EE, ES, LV, PL, RO) would be partly compliant, with dedicated emergency stocks covering less than 30 days. In case of Spain the missing volume was insignificant and according to more recent data the country would be compliant. The other five Member States have part of their emergency stocks held by the government or an agency and could be expected to be compliant after the end of current transition period related to accession.

The five remaining Member States where all stocks are currently held by the industry (EL, IT, LU, SE, UK) would need to establish 12.5 million tons of government/agency stocks. They would need to establish a stockholding entity with the appropriate management structures or entrust the like entity of another Member State. Even some of the latter countries have public or semi-public bodies/agencies in place (sometimes dormant) whose missions could be enlarged towards a control over the dedicated stocks.[51]

If the above volume was to be purchased in the form of crude oil at current market prices (about $70/barrel in the second half of October 2008), the total cost shared amongst the 5 Member States concerned would be about €5 billion. However, it should be emphasized that the required volumes are already present in the EU and the Member States concerned do not necessarily have to buy the stocks to satisfy the new requirements. If they opt for an agency-based solution, each Member State concerned can create an agency/entity in which oil companies would have an interest/obligatory membership (as is already the case e.g. in Germany) and to which stocks could be transferred/delegated without requiring purchase by the Member State.[52] Another option is to resort to other Member States which have substantial "surpluses" compared to the proposed 30-day government/agency obligation and, under some agreement, can make those stocks available to those in need.

If government/agency stocks are to be stored separately from commercial stocks, this is likely to require the building of additional tanks. However, subject to adequate recording and control, these stocks could continue to be held in the companies' storage facilities, even if commingled with operational stocks (this is a standard practice in several Member States, including France). This would also remove or lessen the possible necessity of building additional storage facilities in the MS concerned.

As it was spelled out in section 5.3.3., costs would not necessarily be higher than for mandatory industry stocks. Costs of physical stockholding should be similar while the scale of administrative costs for existing stockholding entities is marginal. This conjecture is

51 Italy established a stockholding agency in 1998 which is not operational for the time being. The Swedish Energy Agency has a role in supervising emergency stocks but is not responsible for holding the stocks.

52 The archetype of the stockholding agencies, the German EBV receives no government funds; its operating costs are covered by a fee paid by member companies on every tonne of eligible product delivered for domestic consumption. Membership in the EBV is compulsory for refiners and importers.

confirmed by the cost data received from Member States: industry-held stocks do not appear to be consistently cheaper than government or agency held ones (see Figure 11).

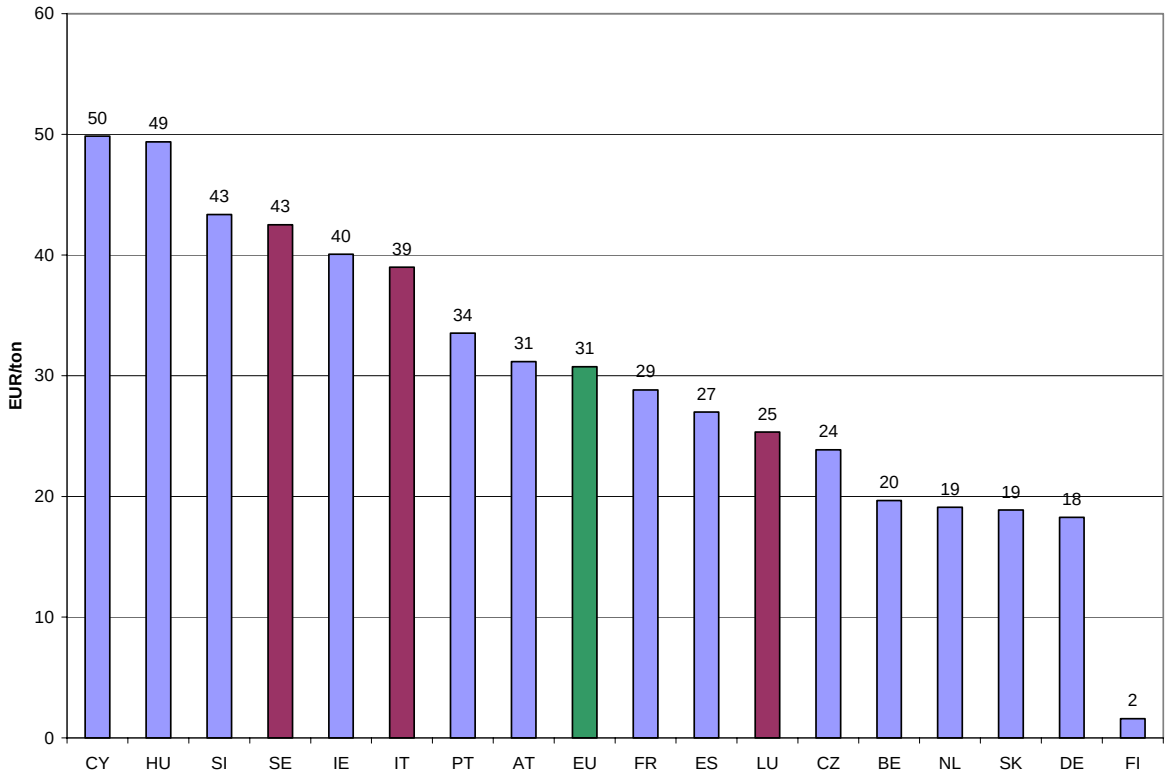

Figure 11: Cost of emergency stockholding in Member States* (2007)

Source: European Commission, DG TREN

Blue columns indicate government/agency stocks while purple columns indicate industry-held stocks.
*Some Member States which are still building up their stocks face significantly higher costs

In the countries which may decide to establish a new stockholding entity, a step by step procedure for the switch should be envisaged.

Companies would continue to face a stockholding obligation in the countries concerned, but its extent would decrease in a number of these countries. Administrative burden related to compliance would not decrease (in countries setting up a new agency it would probably increase), but this could be compensated by the approximation of the EU and IEA systems (setting the obligation and reporting) which would reduce such burden.

5.4. Economic, social, environmental and external impacts

The impacts of the various policy options are not restricted to particular economic sectors or social groups. Considering the important role oil plays in the European energy mix, a supply disruption would inevitably affect the economy and the society as a whole. Therefore, it is in the interest of all sectors and social groups to have a reliable system in place to cope with such a disruption. This does not preclude the possibility that some economic sectors or particular social groups would be affected more than others by a disruption and by Europe's ability or inability to cope with it. The choice from among the options could, for example, definitely have an important effect on the oil industry, in particular the companies which currently have an obligation to maintain emergency stocks.

5.4.1. Economic impacts with respect to competitiveness

Economic impacts – in addition to those already touched upon above – may include those on the competition between different players in the oil industry.

As the stockholding arrangements vary widely between Member States, the effects on the competition are also different for each country. For example, in countries where the obligation to hold stocks relies on the industry, the burden on the companies is higher in comparison to countries where the emergency stocks are state-owned. Furthermore, impacts are different for enterprises with or without storage capacities, as well as for refining and importing companies. Such distortions were presented in section 2.2.3.2.

Option 0: No policy change

This alternative means that existing competitive distortions remain unchanged, and the costs will also remain the same both in terms of level and distribution.

Option 1: Reinforcing control means and coordination mechanisms within the existing system

As the decisions regarding ownership and management of stocks would remain at the discretion of the Member States, the proposed option will not have a significant mitigating effect on the existing competitive distortions. This option would not help to create equal burden for the market participants.

Option 2: Establishing centralized EU system with mandatory state/public ownership of emergency stocks

An agency system, as envisaged under Option 2, can easily cease discrimination between refiners and non-refiners or between companies with and without storage facilities and thereby can avoid any resulting distortions to competition. It would thus help to create "fair and non-discriminatory conditions" specified in the current legislation.

Option 3: Creating "dedicated" EU emergency stocks within a revised version of the existing system

This option would entail a possibility of companies to delegate their remaining obligation to the entity which holds the "dedicated" emergency stocks. In return, they would have to pay a fee not exceeding the costs born by the stockholding entity. As a result, the potential discrimination between different types of market operators would be significantly reduced. In particular, smaller companies with no access to sufficient storage capacity could comply with their obligation in an easy and cost-efficient way. This option would also allow for eradication of the problematic use of "ticket" contracts, thereby contributing to the improvement of stock availability.

5.4.2. Social impacts

The social impacts related to the emergency oil supply legislation mainly derive from the economic impacts of the stockholding arrangements and their functioning or non-functioning in case of an emergency. Disruptions often lead to high energy prices which, either coupled with physical shortage of oil products or not, would particularly hit the most vulnerable parts of the society which would have to face increased heating and transport costs. In the event of sustained disruptions, expected economic losses could lead to increased unemployment,

which would have adverse effects on the society. The release of stocks in severe and sustained disruptions would mitigate such economic harm. Already the existence of a buffer of 90 days emergency stocks may calm markets and help to avoid exaggerated price movements and extreme market reactions.

Since emergency stocks contribute to the integrity of supplies in case of a supply disruption and can therefore help to avoid surging oil prices, they are beneficial to economic and social welfare. Should the system of emergency stocks, for whatever reason, fail to replace the disrupted oil supplies, this would have serious negative consequences on the society. Any policy option which strengthens the ability of the EU to cope with a disruption will reduce the risk of such a failure.

Assuming that the existing legislation will not effectively work in some Member States, we cannot mitigate as necessary the impact of severe supply disruptions under Option 0. Reduced effectiveness and efficiency of stock release can lead to price rises, escalation of market uncertainty, and indirectly trigger unemployment. The most vulnerable groups in society will face difficulties with respect to paying for transport and heating.

As it proposes a consistent system across the EU with high effectiveness and efficiency in case of stock release, Option 2 is likely to best prevent negative economic and social effects from occurring. Option 1 and 3 are also expected to mitigate adverse social impacts.

5.4.3. Environmental impacts

The presented policy options are not expected to have any particular impacts on the environment. The impact on the environment would be relevant only in the case of the construction of new storage facilities. New facilities and tanks would be subject to authorisation procedures and would have to meet prevailing safety and environmental specifications. Acquiring the necessary permits can be a lengthy process and could in some cases face opposition from local citizens ("not in my backyard" syndrome) countering the projects for building new storage facilities. However, if the specific requirements are met, environmental risks to soil, water and air are contained to the minimum.

No new storage facilities would be required under Option 1, unless it turns out during the audits that a country does not actually have 90 days stocks at its disposal. In this case it may be necessary to build new storage facilities.

Under Option 2, with no further commingling of emergency stocks and commercial stocks, the overall physical oil and oil product stocks within the EU would probably increase. This may require the construction of new facilities in some Member States.

Under option 3, the establishment of the 30-day dedicated emergency stocks, if held separately from commercial stocks, might require additional storage capacities in some Member States, especially in those where at present all stocks are held by industry. If commingling is allowed, this would remove or lessen the possible necessity of building additional storage facilities.

5.4.4. Impacts outside the EU

With the exception of candidate countries which will have to take into account any amendments to the current legislation, no significant external impacts are foreseen from any of the options.

Oil supply disruptions to which the oil stock system is to react often happen in third (producer or transit) countries. However, the location of the disruption has no specific practical implications on emergency stocks procedures.

On the other hand, in case of a serious disruption with a global impact, the release of stocks in Europe can bring relief to the global market irrespective of the location of the disruption. This impact is likely to be realized under all policy options (1, 2 and 3).

Provided that the revised rules require an increase of stock levels in some Member States (and thereby increase oil demand), a short-term speculative effect on oil prices cannot be excluded.

The EU's position within the IEA might strengthen by being able to coordinate and channel the actions of non-IEA Member States in case of an IEA emergency response action.

5.5. Impacts of proposed changes in crisis management, calculation and reporting

Calculation

To the extent that options 1, 2 and 3 would entail a switch to the IEA calculation methodology, we have to analyse the potential impacts of this change.

Since for most countries the IEA obligation is higher than the current EU obligation, a switch to the IEA methodology would mean an increasing obligation for non-IEA Member States, many of which are still enjoying a transitional period. However, this switch should not be a problem for IEA member countries which already have to comply with both systems.

It is difficult to directly compare the extent of EU and IEA obligations since the former is set in product equivalent, while the latter is established in crude oil equivalent. In addition, in the IEA system a wider range of products can qualify as emergency stocks. By comparing the compliance of IEA member countries (with the exception of Denmark and the United Kingdom[53]) in the two systems, it was found that the average compliance is 118 days (of consumption) under the current EU rules while it is 112 days (of net imports) under the IEA system (see Table 6). This ratio suggests that a 90-day IEA compliance corresponds to a 95-day EU compliance. In other words, on average, the IEA obligation is about 5% higher. It should be noted that these averages hides considerable differences: the ratio of EU and IEA compliance is largely dependent on the composition of products consumed and stored. In several countries the IEA compliance is actually higher, suggesting that in these countries it is easier to comply with the IEA obligation.

53 These countries were not taken into account because under IEA rules they have no or minimal obligation.

Member State	2007 EU Obligation[1]	latest EU Stocks[1]	latest EU compliance in days[3]	2008 IEA Obligation[2]	latest IEA Stocks[2]	latest IEA compliance in days[3]
AT	2 610	3 623	125	3 120	3 721	107
BE	4 022	2 881	64	4 439	4 620	94
CZ	1 570	1 747	100	2 138	2 621	110
DE	22 302	28 897	117	23 119	32 125	125
DK	1 337	2 088	141	0	2 335	-
EL	3 783	4 679	111	4 051	4 730	105
ES	12 683	16 074	114	16 597	17 142	93
FI	1 967	3 683	168	2 415	3 420	127
FR	16 299	20 459	113	20 010	23 800	107
HU	1 188	1 362	103	1 189	1 959	148
IE	2 040	2 364	104	2 068	2 423	105
IT	12 591	17 198	123	17 818	19 951	101
LU	711	714	90	756	792	94
NL	3 897	7 892	182	4 959	10 306	187
PL[4]	3 590	4 830	121	5 397	7 159	119
PT	2 378	3 477	132	3 042	3 407	101
SE	2 670	4 267	144	2 908	3 592	111
SK	560	538	86	657	965	132
UK	11 206	12 989	104	1 088	12 769	1057
Total	107 405	139 762	117	115 770	157 836	123
Total except DK,UK	94 862	124 685	**118**	114 683	142 732	**112**

Table 6: Comparing current EU and IEA obligations and compliance for Member States with IEA membership

[1]The EU obligation and stock level is in product equivalent, stock levels are from end of March 2008 or April 2008, the obligation is based on 2006 consumption [2]The IEA obligation and stock level is in crude oil equivalent, stock levels are as of 1 January 2008, the obligation is based on 2007 net imports [3]The obligation is 90 days for both the EU and the IEA [4]Poland is likely to become an IEA member country in 2008

From the 8 EU Member States which are not members of the IEA, Romania is a significant producer, and according to the proposed rules would not face an increasing obligation. The other 7 countries have an EU-obligation of about 3 million tons[54], which (according to the above rough calculation) should be topped up by about 150 thousand tons.

This estimation was not confirmed by further, country-by-country analysis. Eurostat and the IEA Secretariat prepared a simulation of these countries' compliance with the IEA obligation, based on their responses to the MOS questionnaire (see Table 7). It was found that five of them (CY, EE, LT, RO, SI) are already compliant with such a hypothetical obligation. Bulgaria is not yet compliant but its IEA compliance is higher than its EU compliance, suggesting that a switch to the IEA methodology would not entail an increasing burden for this Member State. Latvia appears to be the only country which would need to make additional efforts after the proposed changes in calculation.

54 This calculation disregards the transition period some of these countries still enjoy.

Member State	2007 EU Obligation[1]	latest EU Stocks[1]	latest EU compliance	2008 Obligation under IEA rules[2]	Latest Stock level under IEA rules[2]	Calculated compliance under IEA rules
BG	698	315	41	1 235	619	45
CY	573	647	102	688	740	97
EE	230	150	59	210	335	143
LT	377	388	93	523	1 240	213
LV	289	203	63	414	171	37
MT	218	270	112			
RO	1 226	1 129	83	1 159	1 252	97
SI	554	556	90	682	712	94
Total	4 165	3 658	79	4 911	5 069	93

Table 7: Comparing current EU and estimated IEA obligations and compliance for Member States without IEA membership

[1]The EU obligation and stock level is in product equivalent, stock levels are from end of March 2008 or April 2008, the obligation is based on 2006 consumption [2]The IEA obligation and stock level is in crude oil equivalent, calculated from latest MOS submissions [3]Malta does not report MOS

An obligation based on net imports would also mean that the stock levels should reflect the development of import dependency, i.e. as import dependency rises, oil stock levels will have to increase to provide the same coverage in terms of days.

The higher IEA obligation currently provides some cushion in case of an IEA stockdraw (i.e. EU stock levels are not expected to go under 90 days immediately) – this would change with the harmonized obligation.

A switch would also clarify the handling of biofuels which is not clearly addressed in the current EU legislation. In the IEA methodology, pure biofuels are considered as renewables and their import does not entail a stockholding obligation. (Furthermore, it is not possible to meet the stockholding obligation with pure biofuel stocks, unless they are stored in the same facility with fossil fuels, ready for blending.) However, if biofuels are blended into fuels, they are incorporated into net imports and therefore entail a stockholding obligation.

Reporting

The current reporting lag for emergency stocks, as provided for under Council Directive 2006/67/EC, is unduly long. With current information technology, reporting with a shorter lag is unlikely to induce significant additional administrative or financial burden. If Member States would report within shorter time limits, the Commission would have a more up-to-date picture on the development of stocks and – by publishing this data – the industry and the general public would also benefit from this information.

A switch to the Monthly Oil and Natural Gas Statistics (MOS) questionnaire as a reporting tool would not entail difficulties to Member States since Eurostat is already collecting this questionnaire from them. As a result, they could get rid of the current double reporting obligation. However, this would not improve the timeliness of reporting as the deadline is even longer (3 months after the reference month). The reporting deadline can be modified by comitology procedure. The use of the Joint Oil Data Initiative (JODI) questionnaire would provide less detailed but more up-to-date data: it is reported 25 days after the reference

month. The Commission asked Member States on the potential impact of a switch to IEA methodology on administrative burden and they reported that no or only marginal reduction (some man-hours) is expected.

The confidentiality of IEA compliance might change after the harmonization (for EU Member States) if the Commission continues to publish stock levels. This is not opposed by the IEA Secretariat which regards it as a good incentive to comply.

The proposed annual reporting on the location and ownership of stocks, and on the measures taken to ensure their availability, would not entail a significant additional administrative burden for Member States. This information should be already available to Member State administrations, even for stocks held by the industry. The current legislation (Article 3) specifies that Member States have the emergency stocks at their disposal. This is not possible without knowing who is holding the stocks and in which locations. This was confirmed during formal and informal consultations, when several Member States with mandatory industry stocks claimed that such stocks are under full government control.

As it was mentioned in section 2.2.4.3., the reporting of commercial stocks is also important from a security of supply perspective. Nevertheless, views are contradictory as to the benefits of more frequent reporting of commercial stocks. Stakeholders tend to acknowledge that the consumers are likely to benefit from the better transparency provided by frequent reporting. However, many are worried that this could be offset by some disadvantages: the increased costs and administrative burden would in particular hit smaller enterprises, while the potentially decreasing data accuracy could lead to increased volatility and the need for subsequent revisions of data. In addition, weekly reporting makes sense only if the reporting gap is not more than a couple of days. Further investigations on how other countries (particularly the United States) have solved these difficulties will help to decide on the modalities of a European reporting system.

Since the reporting of commercial stocks is not directly related to the emergency stocks system, this impact assessment does not undertake to evaluate its potential impacts in a comprehensive way. In order to better understand the possible impacts on industry and the benefits and drawbacks from more frequent but possibly less reliable data reporting, the Commission will launch a feasibility study on the issue.

Crisis management

Past events showed that there is a need for a swift and effective emergency response system. In particular, if a disruption is addressed by an IEA action, clear rules are necessary to enable a coordinated EU participation in it. The rules outlined in section 4.5. would enable Member States which are also IEA member countries to join an IEA action without a formal EU authorisation but should inform the Commission about their actions. On the other hand, the Commission would be mandated to coordinate the actions of Member States which are not members of the IEA and channel the input of these countries to the IEA Secretariat. As a result, the Commission would be able to enhance and complement the effects of an IEA action.

The proposed rules would provide sufficient flexibility to address smaller (regional) disruption which will not trigger an IEA action.

6. SUMMARY OF THE OPTIONS

Option 0: No policy change

Although Option 0 would not entail additional burden on Member States and the industry, with no policy change an effective EU-wide emergency preparedness cannot be guaranteed. This gives cause for concern since supply disruptions might become more frequent in the future, calling for the improvement of emergency preparedness in order to avoid adverse economic and social impacts.

Option 1: Reinforcing control means and coordination mechanisms within the existing system

This option would not necessarily entail a change to current stockholding arrangements. However, the realization of regular inspections/audits may give us unpleasant surprises: it may turn out that in some Member States the 90 days of stocks are not fully available. In these countries it may take a long time to switch to a better system and to comply with the current obligation.

Option 2: Establishing centralized EU system with mandatory state/public ownership of emergency stocks

This option is very ambitious: it would completely transform the current stockholding system of many Member States. By providing 90 days of dedicated, state-owned emergency stocks, it would definitely improve preparedness, but at the expense of increased government expenditure/debt. This may not be justified by the experience of past disruptions which never necessitated so high stockdraws.

Option 3: Creating dedicated EU emergency stocks within a revised version of the existing system

Requesting Member States to hold a minimum of 30 days stocks under strict government control, and possibly to establish a state-controlled agency to manage these stocks, may be the reasonable compromise between the ideal model (Option 2) and the business as usual option. This option may also be able to overcome the problems of Option 1. It would result in a minimum level of dedicated stocks which is fully available as supplementary stock in case of a disruption and which is sufficient to cope with disruption experienced in the past. For the rest of the obligation it would provide Member States considerable flexibility. Many Member States are reasonably close to complying with this option.

Conclusion

The most important positive impact of Options 1, 2 and 3 is the better availability of emergency stocks and, as a consequence, the improved capacity of the EU to face with a supply disruption and to manage the associated risks. As a negative impact, these options can entail additional financial and/or administrative burden, the extent of which largely depends on the starting point (i.e. the current stockholding structure) and the modalities of the implementation.

In a realistic view options 0 and 2 may be the options which are less opportune or the most difficult to achieve. Option 1 (better controlling) is probably only an intermediate solution

because it may detect failures in Member States' existing systems and has then to be followed by infringement procedures and at the end a switch of the existing procedures to a better system. Option 3 seems to provide for a possibly better and more secure system which could be achieved without harmful legal procedures.

Nevertheless, it might be useful to combine Option 3 with elements of Option 1 (audits, reviews). During the public consultation, most stakeholders argued that physical commingling of emergency and commercial stocks does not pose a problem provided that such stocks are properly recorded and controlled. Allowing commingling would reduce the necessity of building additional storage facilities in the Member States concerned and thereby would reduce financial and environmental implications. However, commingled emergency stocks have to be strictly controlled in order to ensure that such stocks are not moved without government consent.

Criteria	Option 0: No policy change	Option 1: Reinforcing control	Option 2: Centralized system	Option 3: 30 days of dedicated stocks
Impact on emergency preparedness and stock availability	Doubts about the availability of stocks in certain stockholding systems	Stock availability is expected to improve after conducting infringement procedures but other problems would remain	Full availability of emergency stocks as “fresh oil” in an emergency in all MS	Sufficient dedicated emergency stock to address disruptions experienced in the past
Financial burden	No change	Some additional cost for the Commission (for MS only if inspections/audits unveil non-compliance)	Immense additional costs for most governments, while burden on industry ceases	Additional cost for government/agency in about half of MS, while lower burden on industry (depending on implementation)
Administrative burden	No change	Commission’s administrative burden increases (reviews, inspections/audits)	Increasing burden on most governments, while the burden on industry ceases	Increasing burden on some governments (establishing stockholding agencies)
Economic impact	Possible competitive distortions	Possible competitive distortions	Discrimination between market players is fully eliminated	Mitigation of competitive distortions
Social impacts	Increasing risk of social tensions	Reduced risk of social tensions	Reduced risk of social tensions	Reduced risk of social tensions
Environmental impacts	No impact	No impact	Additional storage capacities might be necessary	Additional storage capacities might be necessary

Table 8: Comparison of the options' impacts

7. MONITORING AND EVALUATION

The Commission will monitor the implementation of the proposed changes by:

- Regular analysis of Member States' reporting on the level and composition of emergency stock;
- Periodic review Member States' emergency systems;
- If doubt arise about reported stock levels, audit of Member States' stock levels performed by or on behalf of the Commission;
- If necessary, infringement procedures.

The above activities would be partly carried out in conjunction with the IEA Secretariat.

Meetings of the Oil Supply Group will be utilized to follow up and discuss the implementation and share experiences of Member States.