

# STRATEGIC ENERGY SOURCES AND TRENDS OF ALTERNATIVE ENERGIES IN THE EUROPEAN UNION

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## ***Abstract***

*The present dynamic security environment forced organizations or countries to radically restructure their objectives and strategies. In the last years, the European Union energy strategy has been in the process of a profound objectives transformation. The paper deals with the problem of the energy security in the European Union and the role of renewable energies to security supply in the context of the global energetic crisis, and the role of multiple factors which destroy the equilibrium among the energetic security, economical development and environmental evolution. There are a large range of proposed European projects in the energetic sphere that intend to fulfill the request to increase the security supply in order to weaken the dependence of European countries on the Russian energetic resources.*

*European energy demand and import dependence continues to increase and primary energy sources are mainly used to cover European energy needs. Considering the energy security is very important for European Union, this paper presents an overview of strategic energy sources and underlines the importance of renewable energy in the way to ensure security supply of energy. Today, the international energy system is characterized by a high level of interdependence, the energy supply and climate change security are the central concerns for policy makers and they give significant dimensions of the long-term quest for a sustainable energy system. In this context one of policies developed by European Union is to promote the renewable energy.*

**Key-words:** *energy, security of supply, classical fuels, renewable energies, European Union*

**JEL Classification:** Q40, Q41, Q42

## **1. Introduction**

Access to energy is fundamental to our civilization, and economic and social development is fuelling a growing demand for reliable, affordable and clean energy. Energy security is back on political and public agendas and geopolitics is a major factor shaping the world today. Recent events, including the increasing tensions in Middle East and the crisis between Russia and Ukraine, frozen conflicts from Caucasus and, of course, the Russian military intervention in Georgia raise the fragility of the world's energy supply system and the concerns over politically motivated supply disruptions and resulting price volatility. These concerns are not based on the overall availability of resources, but on the concentration of strategic energy resources in a few countries.

Global main fossil fuels (oil, gas and coal) reserves will continue the energy supply dominance for the near future. The past couple of years have clearly demonstrated the volatile nature of oil and the world's continuing dependence on this leading energy resource. The doubling of oil prices during the last few years has not, however, been caused by dwindling reserves. The studies demonstrates that global reserves of oil are still large enough to meet the demand for the next few decades, and the continuous improvement in exploration, processing, conversion and end-use technologies may extend this period even further. Concentration of oil resources in a few regions with problems and long supply routes to the main markets are important problems for energy security of European Union.

Security of energy supply is a recurrent concept in national energy policies and also at the European and worldwide levels. In November 2000, the European Commission issued a green paper named „Towards an European Strategy on Energy Supply Security”. This report carried a strong warning about European dependence on imported energy that could increase from 50 percent in 2000 to 70 percent in 2020-2030.<sup>1</sup> The European Parliament and the Council passed their agreements, stressing the importance of minimizing the risks of dependency both by the European Union and the member states.

## **2. Energy dependence and supply security**

The European Union is consuming more and more energy and importing more and more energy products. Community production is insufficient for the Union's energy requirements. As a result, external dependence on energy is constantly increasing.

At this moment, according to statistic reports, current energy demand is covered by 41% oil, 22% gas, 16% coal (hard coal, lignite and peat), 15% nuclear energy and 6% renewable energies. If nothing is done, the total energy picture in 2030 will continue to be dominated by fossil fuels: 38% oil, 29% gas, 19% solid fuels, 8% renewable energies and barely 6% nuclear energy.<sup>2</sup> Oil reserves are very unevenly distributed across the world, and the European Union in particular has very few. In the applicant countries, the situation is even worse. The Community has eight years of known reserves at current consumption rates (assuming no change in consumption patterns and/or related technologies). Thanks to the North Sea, whose reserves belong mainly to the United Kingdom, the Union produces some 158.3 million toe (1997), representing scarcely 4.4% of world output<sup>3</sup>. Today, the cost of extracting one barrel of oil in Europe ranges between USD 7-11, compared to a range of USD 1-3 in the Middle East<sup>4</sup>.

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<sup>1</sup> *Green Paper – Towards a European Strategy on Energy Supply Security*, European Commission, Brussels, 29 November 2000 (COM(2000) 769 final).

<sup>2</sup> *Ibidem*.

<sup>3</sup> *World Energy Technology Outlook – WETO H2*, European Commission, European Communities, Belgium, 2006.

<sup>4</sup> <http://www.timesonline.co.uk/tol/news/world/>.

Natural gas reserves are more evenly distributed on the global level, but the European Union is once again unfortunate, having barely 2% of world reserves, or 20 years consumption at present rates, 223.2 million toe were extracted in 1997, representing 12% of world production. Most of these reserves are located in the Netherlands (56%) and the UK (24%). While world energy consumption has risen since the first oil crisis, the EU also succeeded in reducing its energy dependence over this period, from 60% in 1973 to 50% in 1999<sup>5</sup>. Policies focusing on demand management (energy conservation), development of internal resources (North Sea oil) and diversification (revival of nuclear programs research into renewable energies etc.).

It is essential for the Union to maintain satisfactory relations with transit countries in order to have stable access to the energy products it needs. This is especially true for gas, where the main risk lies in transit conditions and continuing diversification of transport routes, not in the status of world reserves. With regard to supplies originating in Russia, the Caspian Sea basin, North Africa and the Middle East, two regions deserve special attention, eastern and north Europe on the one hand and the Mediterranean basin on the other. Russia plays an essential role, providing the Union with more than 40% of its natural gas needs. However, there is also considerable potential for oil and gas production in the countries of the Caspian Sea basin. As a producer, Russia is the world's leading natural gas exporter. It would also like to export more oil, and even electricity, to Europe, establishing new transport routes. A range of transport routes will also be necessary if the resources of the Caspian Sea basin are to be fully exploited. Particular attention should therefore be paid to transit States such as Turkey, the Ukraine, the Baltic States and the Caucasian countries. North Africa is also an important producer region for Europe (Algeria, Libya). In the light of their intention to join the European Union energy policies and objectives should consider what support it could give to Turkey, Bulgaria and Romania, to develop transit facilities for Caspian basin gas and oil, in addition to existing plans for transporting Russian supplies. The natural gas interconnection project linking Greece and Turkey opens up the potential for European access to new sources of natural gas, providing an alternative to seaborne trade. It could also provide an export route for Middle Eastern production. The northern, central and Mediterranean dimensions of energy policy assume primordial importance in this context.

Generally, oil contribution to world primary energy consumption is 37 percent. In European countries, oil contribution varies from 16 to 90 percent of total energy demand<sup>6</sup>. After the first oil shocks, some countries like France or Belgium have lessened their oil dependence by developing nuclear power while others have accelerated natural gas or coal substitution. The world geopolitics of natural gas is very similar than for oil, except for the exceptional position of Russia which holds about one third of world natural gas resources. Russia accounts for about 35 percent of European natural gas imports. Other imports come from Norway, Algeria, Nigeria and Libya.

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<sup>5</sup> *World Oil Outlook*, Organization of the Petroleum Exporting Countries, Vienna, 2008.

<sup>6</sup> *Global Energy and Energy Security: A New Agenda*, Cambridge Energy Research Associates (CERA) 2001.

The rapid development of LNG and the building of new gas lines should enable Europe to diversify its sources of supply.

A standard definition of supply is a flow of energy supply to meet demand in a manner and at a price level that does not disrupt the course of the economy in an environmental sustainable manner.<sup>7</sup> The concept is vast, multiform as it encompasses the whole physical and non physical supply chain. It has also important time and space dimensions. It can be more precisely defined as: a reliable supply of energy. Choices both for primary energy sources and geographical suppliers ought to be as plentiful as possible, within a competitive framework, in order to reduce dependence on only one or two. Diversification in these two areas, primary energy sources and suppliers, is the key to ensuring of supply, a reliable transportation of supply. Transportation networks ought to be physically available to qualified players, well maintained, and expended as required, and should offer as many competitive route options as possible, a reliable distribution and delivery of supply to the final customer. Energy ought to be efficiently delivered to the final customer according to particular time and quality standard without discrimination. At reasonable price over a continuous period. As far as oil and gas are concerned, imports of which are increasing, a stronger mechanism ought to be provided to build up strategic stocks and to foresee new import routes.

### 3. Trends of renewable resources

Although the worldwide production of renewable energy is expected to grow quickly, its share of the global energy mix will hardly increase. Hydropower is the largest and most important renewable resource and generates about 17% of the world's electricity<sup>8</sup>. It is estimated that only 33% of the technically and economically feasible global potential of hydropower has been developed to date, although there are significant regional variations. In Europe and North America, the majority of sites have been developed, while considerable potential for new development remains in Africa, Asia and South America. Large hydropower schemes, however, often face challenges due to their environmental impacts and long-term returns on investment.

Non-hydro renewable are expected to make a growing contribution to global power generation, even if their total share is likely to reach only about 5% in 2030.<sup>9</sup> Biomass has the potential to become the world's largest and most sustainable renewable energy source. To progress from this potential stage, both production and end-use technologies must be modernized.

Wind is often considered to be the most advanced of the renewable, after hydropower. Offshore projects spur the development of larger machines and wind turbines of up to 5 MW are about to enter the market. However, the electricity systems with an increasing share of wind power in their fuel mix will have to face new challenges. Experience in those countries with a high share of wind in their electricity production demonstrates the problems of integrating an intermittent energy source into

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<sup>7</sup> *Ibidem.*

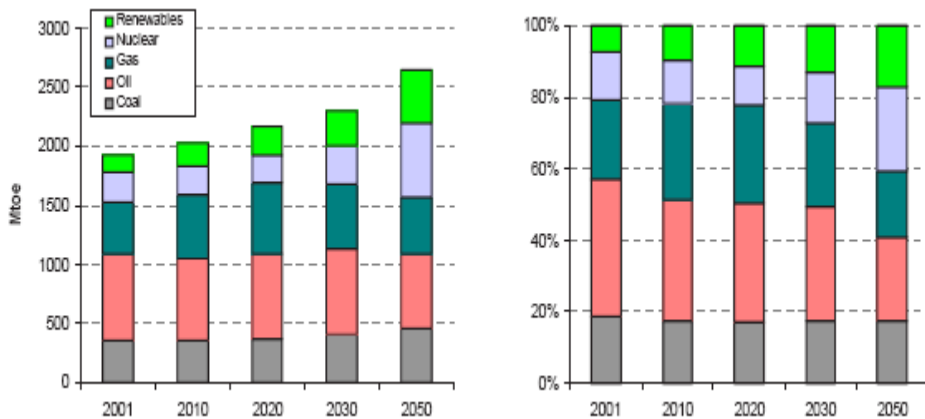
<sup>8</sup> Survey of energy resources 20<sup>th</sup> Edition, World Energy Council, London.

<sup>9</sup> *Ibidem.*

the grid and the implications this can have for the global power system performance, including the need for new concepts for power plant operation scheduling and system control. Geothermal is an important renewable resource and it can be used for base-load electricity production. The best geothermal fields are located within well-defined belts of geologic activity. Geothermal energy converting systems are able to provide electricity with an annual capacity factor of over 90%.<sup>10</sup> Solar radiation, the earth's prime source of energy, is being increasingly used. While photovoltaic (PV) power generation is still the most expensive solar technology, costs are falling and its versatility enables it to find many stand-alone applications.

We live in an increasingly interdependent world. And central to this is the global energy system. Given that fossil fuels will continue to satisfy the overwhelming share of the world's commercial energy needs for the foreseeable future and that there are adequate resources, the challenge going forward is clear. It is making sure that the emphasis is placed on how to develop, produce, transport, refine and deliver oil to end-users in an efficient, timely, sustainable, economic and reliable manner.

Beyond 2012, non-OPEC supply is expected to maintain its growth, particularly from non-crude sources, such as oil sands, and biofuels, mainly in the US, Europe and Brazil. In total, almost 11 mb/d of non-conventional oil supply comes from non-OPEC by 2030 in the reference case, an increase of more than 8 mb/d from the 2006 level. By 2030, total non-OPEC supply reaches 60 mb/d. These forecasts suggest that an additional 12-13 mb/d of OPEC crude will be required by 2030, but the share of OPEC crude is not expected to be markedly different from that of today. Total demand for conventional crude will not exceed 82 mb/d by 2030<sup>11</sup>. Of course, bringing these supplies to market implies major challenges for the oil industry.



Source: World Energy Technology Outlook – WETO H2

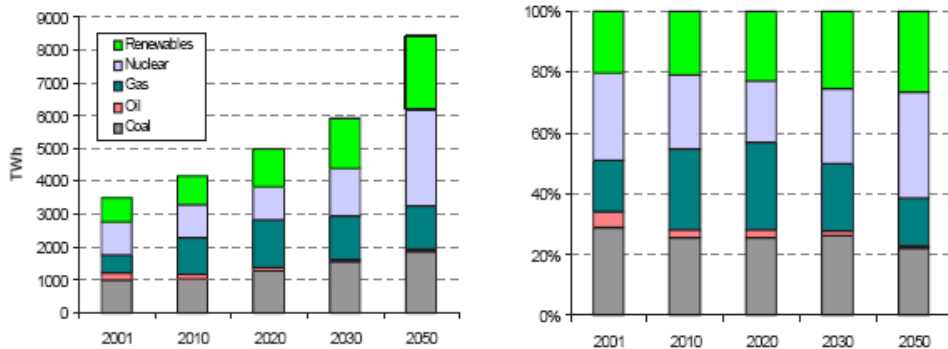
Fig. 1. Primary energy demand in Europe

<sup>10</sup> *Ibidem*.

<sup>11</sup> *World Oil Outlook*, Organization of the Petroleum Exporting Countries, Vienna, 2008.

Security of demand is a real issue. It is intrinsically linked to security of supply. It is not just a question of whether there will be enough supply to meet demand; it is a question of whether there will be enough demand to meet current and predicted supply. All of this points to a growing energy interdependence. This, if anything, is the new world of energy; something that all stakeholders will increasingly need to embrace. This new world is nothing new for the energy industry, and the oil industry in particular, which has a long and successful history of adapting to change, and will continue to do so. One fundamental way forward is for a pragmatic dialogue among all parties, a positive dialogue that is cognizant of the needs and responsibilities of oil producers and consumers, oil exporters and importers, developed and developing nations, and present and future generations.

Next figure shows a forecast that by 2050 more than 60% of electricity in Europe comes from renewable energies or nuclear energy.



Source: World Energy Technology Outlook – WETO H2

Fig. 2. Electricity production and fuel-mix in Europe

Europe's citizens and companies need a secure supply of energy at affordable prices in order maintaining our standards of living. At the same time, the negative effects of energy use, particularly fossil fuels, on the environment must be reduced. That is why EU policy focuses on creating a competitive internal energy market, on developing renewable energy sources, on reducing dependence on imported fuels, and on doing more with a lower consumption of energy.

#### 4. Conclusions

Europe's increasing dependence on external energy resources, and the ever-greater distance at which those resources are located are set to increase the burden of both transport costs and transit requirements. The challenges posed by the transit problem have also been significantly complicated by the emergence of the New Independent States (NIS) out of the ruins of the Soviet Union. The gas crisis underlines one of the fundamental weaknesses of European energy policy. Because of national interests, there is no real common European energy policy and efforts to create an internal energy market are also hampered by all kind of obstacles. Securing a diverse energy mix has been identified as a key policy objective in order to shield Europe from

potential external energy crises and achieve supply-security and environmental sustainability in the long term.

Some objectives majors of EU energy policy overriding the European agenda: increasing security of supply, ensuring the competitiveness of European economies and the availability of affordable energy, promoting environmental sustainability and combating climate change

Renewable energies are essential contributors to the energy supply portfolio as they contribute to world energy supply security, reducing dependency on fossil fuel resources, and provide opportunities for mitigating greenhouse gases. A diversified fuel mix is a prerequisite for energy security, stability of prices and supply, and should be taken into consideration when developing national energy plans or long-term business strategies, in particular against the background of the growing short term focus of the liberalized energy markets.

The European Council reaffirms the strategic importance of global warming, together with the need to ensure security of supply and enhance business competitiveness, make it ever more vital and pressing for the EU to put in place an integrated policy on energy combining action at the European and the Member States' level.

The Black Sea region is a production and transmission area of strategic importance for EU energy supply security. It offers significant potential for energy supply diversification and it is therefore an important component of the EU's external energy strategy. Energy supply security diversification is in the interest of our partners in the region, as well as the EU.

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## ROMANIAN SHIPPING AND THE INTEGRATION CHALLENGES

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### *Abstract*

*The specialists from the European Commission say that the most efficient method for reducing the fuel consumption for transports as well as reducing pollution and increasing the safety circulation, which is also rapidly increasing for the transport on navigable ways.*

*The European Commission is establishing a strategy for the next 15-20 years to develop the intra-communitarian transport so that 40-45% of all goods to be transported on water.*

*Romania has the opportunity to develop this kind of transport because of the Danube River and Sulina and the Danube – Black Sea channels. However, it could be the same situation with the Danube as it is on roads, with too much traffic on it. The Danube ports' infrastructure on the Romanian side is the same from the middle of the 20<sup>th</sup> century and it is not navigable all year long.*

**Key-words:** *ships, water transports, Danube*

**JEL Classification:** M11

Shipping is one of the oldest human activities.

Maritime and river waterways, mostly natural, offer all ships, regardless of the flag they sail for, wide travel possibilities.[3] Since 2006, there are in Romania 1,731 km of navigable waters, out of which:

- 1,075 km on the Danube;
- 524 km on secondary rivers;
- 132 km on channels. [7]

Commodity transport on internal waterways has certain advantages as compared to the other types of transportation:

- it is suitable for the goods' transport at low costs;
- it is “environmentally friendly”;
- it is relatively cheaper;
- requests a relatively low maintenance and network development;
- can be an important connection for the development of combined transport system.

Waterways transport is focused on the Danube, in the south of the country. Moreover, it includes the secondary transport branches of the Danube and the Danube's Channels – The Black Sea and The White Gate – Midia Navodari, between

the Danube and the coast near Constanta. Moreover, there are different small navigable channels, including natural lakes and tanks in the river system, which are especially used for entertainment and local traffic of goods at a small scale. The Danube is an international waterway which spreads from the Black Sea to Sulina in Romania via Belgrade in Serbia, Croatia, Budapest in Hungary, Bratislava in Slovakia and Vienna in Austria to the source point in the Black Forest Mountains in Germany. It has a total length of 2,845 km. It is navigable 2,411 km until Bamberg, where it meets the Rhine via Bamberg/Kelheim Channel with a length of 171 km. The river's length in Romania or along the Romanian border is of 1,075 km. The 170 km distance between Braila and the Black Sea is open for shipping. The Danube is part of the waterway axis TEN-T – 18: Rhine/Meuse-Main-Danube and it offers Romania and the other countries transits major possibilities to develop water transport. Therefore, there are under development or design workings for the improvement of shipping conditions. Moreover, the Danube is a natural barrier for the road/railway transport. It has only three bridges on the Romanian section, although the building of a fourth bridge is planned at Vidin-Calafat and there are a few other passing possibilities by ferry. [6] Transport on internal waterways, although evolving, is not sufficiently enough exploited, therefore having a great development potential, all the more so it has a major advantage from the other ways of transport: it is economical, non-pollutant and has a high level of safety. In addition, a possible development of it would help relieve the road traffic in the north-west of Europe (probably the most affected by this situation).

Shipping represents a very important aspect under the context of the European Union development, which depends on it, in view of its geographical situation but also its historical legacy.

Therefore, 90% of European Union's external commerce and 43% of the internal one is made by means of maritime connections. Like road, air or internal waterway transport, the process of liberalization and opening national markets within the European Union, is almost completed.

Shipping will benefit from improvement workings of navigation conditions on the two sectors on the Danube: the Iron Gates II-Calarasi, respectively Braila-Calarasi. In order for the projects of over 50 million euros to be considered for approval at the European Commission, and because the procedures necessary to start the workings are difficult, the MTCT leaders search for solutions to accelerate investments. [5]

Strictly according to the investments stipulated by the authorities, the shipping industry is among the last as far as infrastructure is concerned. Romania is on top of the European classification from the point of view of the proportion of resources assigned to river transport: as compared to the EU average of 1,1%, Romania gives 3,7% for the transport on the Danube.

River Administration of Lower Danube representatives consider that much more is actually needed. The EU should offer bigger financial support to river transport, since nowadays funds are fewer than for other ways of transport. The ship does not bring the goods, but the goods bring the ship. This scenario supposes the existence of infrastructure: we need a unitary approach of infrastructure elements near the Danube. Terminals in ports, a railway connection Targu Bujor-Albita and a bridge near

Braila-Galati are necessary, and, by simultaneously financing these projects, river traffic development could be encouraged.

Ministry representatives stated that there is money for the development of the danubian ports – 25 million euros – but the money will only be given to the private operators willing to invest in specialized terminals. Upstream of Braila however, the improvement of navigation conditions is requested. For Calarasi-Braila sector all studies and projects are ready, financing is provided, but some ecologist organisations made everything stop. It is strange that these organisations have not expressed their opinion, or criticised or given suggestions during public consultations for the projects. They now claim that sturgeons are being killed, but the specialists who have designed the projects actually believe that, by increasing the current's speed it will come to the Danube's flow regime from 50 years ago, before the building of the Iron Gates.

According to the port's administration representatives, the problems concerning projects on the Danube are much serious for Constanta than delaying the construction of Sun Highway. This is because terrestrial infrastructure (road and railway) cannot take the traffic from the port. "Constanta keeps its hub position for the Black Sea for containerized transport, with a traffic increase of 35% this year, up to 1,4 million TEU, according to the last estimations. The Danube's improvement will probably give Constanta the opportunity to become a distribution centre for Central Europe. For this reason but also because the present container terminal barely faces the transit for the countries bordering the Black Sea, the next stage in the port's development concerns the accomplishment of 3 South Mole, with a platform of 35 ha, for which 70 million euros are provided. Also, the extension of 2 South Mole, through an investment from DP World. Once this investment is completed, the present terminal for containers will increase its capacity to 2,5 million TEU", stated Adrian Bratu, commercial division manager of the Maritime Ports Administration Constanta. [5]

The Administration for Navigable Channels (ANC) published the statistics regarding traffic on the first semester, also estimating that until the end of 2008 the limit of 28 tons capacity, which means an increase of almost 10% as compared to last year.

According to ANC, the traffic of goods during the first half of the year was affected by the decrease in activity of Mital Steel Galati, where, for 3 months, people have worked in crash situation and barges have been blocked with raw material, remaining unloaded. Moreover, the cement produced at Medgidia has no longer been exported in barges, as during the last years. However, the total volume of traffic of goods reaches the level registered last year and it has recently improved seriously, reaching a top of 2,45 million tons capacity (92,4% of the estimated level) in June 2008. The navigable have been transited in June by 1,647 ships and 829 sea locks have been made. Cumulated during the first 6 months of 2008, a traffic of 12,653,936 tons capacity was registered. The most transited types of goods were ferrous and non-ferrous ore, coal (export for Austria, Hungary and Serbia), coking coal (export for the Ukraine). Also, during this period, the frequency of urea transport for export from Turnu Magurele enterprise has increased.

It has been estimated that the 2008 traffic will exceed the one in 2007. According to the first estimations, it was stated that it will reach 28 million tons capacity if the

Danube's levels will be the same as last year. During July-September 2008, a period during which serious problems were encountered due to the barriers from different sectors, but the water reserve in the river's basin make us estimate good levels of the Danube for 2008.

The National Company Administration of Navigable Channels (ANC) published an optimistic prognosis of the river traffic for the current year: according to estimations, a traffic increase of 13% might be registered in 2008 (expressed in tons capacity). In order for the navigable channels to come to the 30 million tons capacity value, the Danube's debit should keep within normal limits. If navigation will not encounter extreme hydrological conditions, the ANC management estimates that the traffic level from 2005 might even be exceeded, due to certain new flows of goods. Beyond the traffic prognosis, ANC has announced that it will try to find, together with the European partners, solutions for eliminating navigation problems. At the same time, the company intended to use starting with this year a new indicator for traffic measurement, meant to eliminate the repeated registration of the same quantities of goods.

According to the company's records, in 2007, the traffic on the navigable channels totalled 26,587,991 tons capacity, a level considered relatively low. This low level is blamed on drought, which has influenced especially the production and transport of grain. Also, in navigation conditions on small waters at the Danube, the iron ore traffic decrease towards Serbia and Hungary was registered, and the export of rolled steel – both internal and in transit – has considerably diminished. Moreover, the decrease of Romanian exports and of other countries bordering the Danube was the main reason of traffic diminution on navigable channels. [5]

A recovery was, however, estimated for 2008. In December 2007, a flow of iron ore and coal towards Austria and Germany was registered, which can improve in 2008 if navigation on the Danube is not affected by low water levels. If we take into consideration the flow of goods towards and from Serbia, Hungary and Bulgaria, as well as the resumption of transport to the metallurgical enterprise in Tulcea, it can be anticipated the achievement and possibly the exceeding of 2005 traffic level (32 million tons capacity).

In order to better quantify the ANC efforts, the company makes, starting this year, statistical records using a new indicator: tons capacity-km. Usually, in the European Union, this indicator is not a port one and it eliminates the possibility of double recording a quantity of goods, if it is transported from start to finish on the two channels. The indicator takes into consideration the covered distance and it allows a better quantification of incomes from traffic (these have a percentage of approximately 80% of the total incomes of the ANC).

For 2008, the ANC has estimated a level of 1,825 million tons capacity-km, up with 13% as compared to 2007, when 1,617 million tons capacity-km were registered.

The total traffic of goods developed through the Romanian ports had an increase of around 1.14% as compared to 2007, reaching 57.784 million tons. The National Company Administration of Navigable Channels (NCANC) Constanta published on the 23<sup>rd</sup> of January the information regarding the traffic in 2007, the reporting showing notable increases for shipping and transit, respectively decreases of 10% for the river

traffic and 12% for coastal trade. The most spectacular results have been registered by the container terminals in Constanta, which totalled a traffic volume of 1,411,370 TEU, 36% more than in 2006. As for the container traffic, the quantitative growth was of 29%, from 9.816 million tons to 12.643 million tons.

Shipping totalled 47.015 million tons, 4% higher than 2006. The total transit had a 21% increase, from 12.835 million tons to 15.571 million tons. River traffic totalled 10.769 million tons and coastal trade – 7.055 million tons.

The goods with the highest quantitative increases have been various articles, iron ores, iron and steel waste, blast furnace slag, solid mineral fuels, metallic products and chemical products. The grain, non-ferrous ore and products and also oil traffic decreased.

Shipping suffered in 2007 the biggest rise in prices.

Continuously growing for two years now, the shipping costs for shipping of raw materials reached an unprecedented level during the last months of 2007. Practically, in some cases, the cost of transport exceeded the goods' value, but the effects are not yet entirely felt, since 70% of the raw material transport market is based on long term contracts. The situation is the same around the world as well. If in 2006 the rental of a ship for raw material transport from Brazil to China cost 65,000 dollars, the price tripled today, reaching 180,000 dollars. Baltex Exchange Dry Index, the most important worldwide index for shipping reached a record level last month, with an increase of 169% as compared to the same period in 2006. According to market specialists, suppliers, merchants and buyers will face high transport rates next year, too, stabilizing only in 2009, due to the water release of some new bulk carriers. Good profits for amateurs! [5]

Some experts simply claim there are not enough ships! The crisis is blamed on the explosion of the volume of global commerce, because of certain extremely developing countries, such as India and China. On the other hand, the Chinese production industry absorbs huge quantities of raw material, which makes it search for resources in far distances. If Australia were the traditional source of iron ore for the Chinese giant, demand reached such a high level that most of imports now come from much furthermore mines. Practically, those ships that until recently sailed on a relatively short course in South-East Pacific are now blocked for long periods of time for voyages in the Indian Ocean and the South Pacific.

It is true that the ship crisis is not the only explanation for transports' increase in prices. The inadequate equipment of ports is also to be blamed. For example, in Brazilian ports, ships hold on shore even for two weeks because of the insufficient operating capacity. And Brazil is not the only example: according to Global Ports Congestion Index (an index which describes waiting times in ports), the biggest Australian ports were suffocated at the middle of October by 131 bulk carriers of coal and iron ore, exporters having to reduce supplies because of the congestion.

If causes are not very clear, the result is much easier to be estimated: the high cost of raw material transport will reflect in higher prices for finished products. While long term transport contracts are renegotiated, there is the risk of having a chain reaction, which will have as effect speculative increases in prices for steel or aluminium. If such intermediary products will get more expensive, the increase in

prices of finished products is possible. And this time transport costs can no longer be blamed, because manufactured goods are usually delivered on containers and there is not a port container crisis. While searching for solutions, some giant miners found the answer: they buy their own ships. Rio Tinto Plc is a happy example, because it ordered in 2004 a bulk carrier for bauxite and it received it exactly when transport tariffs went wild. The company is now waiting for the delivery of four brand new ships, for not having to contract transports at stiff prices on the “spot” market. Others have tried to rent ships, but such options are not always available to anyone: the ones who have the financial resources are ready to stop unprofitable deliveries. A possible alternative might be offered by port administrations, but the congestion is rather a support for taxes increase rather than for improving the equipments. Such an example is the decision of Shanghai International Port Group to increase tariffs by 10%-21% for operating the containerized goods starting with the 1<sup>st</sup> of January 2008. What is true is that, at a global level, the need for new operating capacities is aware, because statistics do not lie. According to Simpson, Spence&Young, a British naval broker, also acknowledged for relevant market researches, world’s great ports registered tonnage records operated during the first eight months of this year. Quoting only two of the British statistics, South Corra’s imports increased by 3% only for coal, exceeding 58 million tons, while Brazil sent 167.1 million tons of goods through ports, 10 million tons more than last year.

In the end, it all comes down to shipyards’ capacity to build new bulk carriers. And the news from South Korea, China and Japan are optimistic: After having released, years in row, especially port containers, builders now began to take orders for bulk carriers. The only problem would be that honouring the orders is done after 36 months, which means that there will be new ships for balancing the demand for raw material transport only in 2010. In Eastern and Central Europe, the percentage of internal navigable transport is at the moment of only 7% of the total, while in Benelux reaches 40%. In Romania, however, the waterways traffic of goods does not have the same development rhythm as the one of road transport. Romania and central European countries are interested in the development of transport on the Danube, because the river provides the shortest connection between markets within the centre of the continent and the ports in the Far East. Besides arranging the Danube and the Romanian danubian ports, problems on the river sectors from the other countries bordering Romania need to be settled and the river fleet needs to be modernized. Ships have to sail with the same speed as on the Rhine and they have to consume less fuel. By attracting harbour transit and terrestrial transport on internal waterways, the incomes of the Romanian companies involved in type of activity might increase and the GNP would grow, as well as incomes from taxes collected to the budget. For example, Hamburg harbour area, because of the transit and transport activities, gets 16% of the incomes from transports, while the average at the level of Germany is of only 7%.

The value of a port’s traffic capacity can be improved by a better labour organization, by expanding and improving mechanization, by the most judicious use of deposits, increasing the turnover of goods, by increasing the level of double operations

for ships and the other means of transport or by increasing the level of specialization of working sectors and operations, therefore, by an efficient scientific management. [4]

Shipping in Romania is not used at maximum efficiency. All opportunities offered by this type of transport have to be superiorly capitalized through an adequate management.

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