

Maciej Bialek*, Elwira Gross-Golacka*, Maciej Kaliski**

**RATIONALIZATION PROCESS
IN THE REFINING SECTOR OF THE EUROPEAN UNION
IN THE CONTEXT OF ACTIVITIES AIMED
AT RESTORING THE COMPETITIVENESS OF REFINERIES**

1. INTRODUCTION

Analysis of factors shaping the market environment the oil sector in the European Union leads to the conclusion that the main elements having an impact on the profitability of refinery operations include their complexity index, access to a particular slate of crude oil, supply infrastructure (land premium, supply side, etc.) as well as laws and regulations regarding this very industry (both EU and national legislation). It should be emphasized that on the one hand European refiners compete against each other on national markets (including the EU market), on the other hand, however, they are vulnerable to competitive activity of refineries from outside of the European Union. Recent years clearly outline the downturn in the oil refining sector of the EU, that is manifested by idling the refineries, changes in their base model activity (conversion into the fuel and crude oil storage sites), or at best sector acquisitions by foreign companies (mainly from the Russian Federation). The progressive loss of capacity of oil refining on the Old Continent will cause significant changes in the energy security of fuel supplies, which simply, will have to be imported from abroad in the foreseeable future. In order to counteract the negative developments in the market, refineries affiliated with professional organizations (such as EUROPIA, Concawe) have taken an action in co-operation with the European Commission and the International Energy Agency aimed to develop the so-called pilot - horizontal control of refining sector efficiency (fitness check) involving the review of existing EU law. The purpose of this activity is to identify unnecessary burdens and unintended, negative impact of existing EU law on the sector. In line with the European

* Ministry of Economy, Warsaw, Poland

** AGH University of Science and Technology, Faculty of Drilling, Oil and Gas, Krakow, Poland

Commission plans, the results of a fitness check are to be published in late 2014, yet the new non-legislative and legislative initiatives of the EU should take into account the context of the restoration of refinery competitiveness.

2. KEY FACTORS SHAPING THE CRUDE OIL REFINING IN THE EU IN 2013

For several years, the refining sector in the European Union has been exposed to negative phenomena occurring in its market environment. The main underlying reason of this state of affairs, in general, was the downturn in the global economy (including the EU) at the turn of 2007/2008. Moreover, the reduction in the rate of growth of GDP of each UE member country (in many cases presenting the negative indicators of GDP) resulted in the decrease in demand for liquid fuels. It should be noted, however, that the process of economic downturn in the refining sector should be seen through the prism of at least several factors such as the cost of oil supplied to refineries, sources of supply, technological parameters of oil processing, supply infrastructure and the legal environment (both in EU and at the national level). In addition, it is possible to mention a number of additional elements that affect operability and results of the refinery activity in the EU, yet the above-mentioned key factors are of paramount importance for the sector and will influence their current operation in the future. Therefore, the analysis of this very factors including forecasts regarding crude oil processing sector in Europe in the medium term (Medium Term Oil Market Report 2012 of the International Energy Agency) and long-term (World Energy Outlook of the International Energy Agency) is extremely important.

3. CRUDE OIL PRICES - A KEY FACTOR IN THE PROFITABILITY OF THE REFINING ACTIVITY

In 2013, the average price of a barrel of crude oil (108.5 USD) was about 3 USD cheaper than in 2012, when the black gold was valued at around 111 USD per barrel [1]. The European refineries are paying different prices for the crude oil, as globally there are quite a lot of benchmarks of oil prices. Yet, only three of them are considered to be crucial for the development of the price formation of crude oil supplied to a specific geographical areas. The primary crude oil benchmark in Europe is Brent, a mixture of about 15 types of crude oil extracted in the North Sea (in North America, West Texas Intermediate is a key benchmark) [2]. The third type of oil benchmark is DUBAI, on the basis of which contracts for the supply of crude oil in the Asian region are concluded. According to the U.S. Energy Information Administration data regarding the period 2006 - 2013, since 2011 there have been a remarkable difference in the prices of Brent and WTI, whereas both benchmarks were traded in the same narrow range in the previous years [3]. The explanation of this phenomenon should include at least a few elements that warrant further investigation, but the key factor dates back as far as 1973, the year of the so-called first oil crisis. It is in this very year that the ban on export of crude oil from

the US was enacted by the American Government, in order to strengthen the energy security of the country. Another important issue was the lack of connection of the US crude oil storage site in Cushing (where is valued petroleum) to the south coast of the U.S. (PADD 3 region) through a system of pipelines. In 2012, the construction of the connector was completed and in mid-2013, the system was finally fully operational. This was reflected in the low level of the spread between WTI and Brent benchmarks. However, since mid-2013 to January 2014, the discount of WTI to Brent has increased to around \$ 10 per barrel, reaching as high as USD 20 per barrel in December 2013) [4].

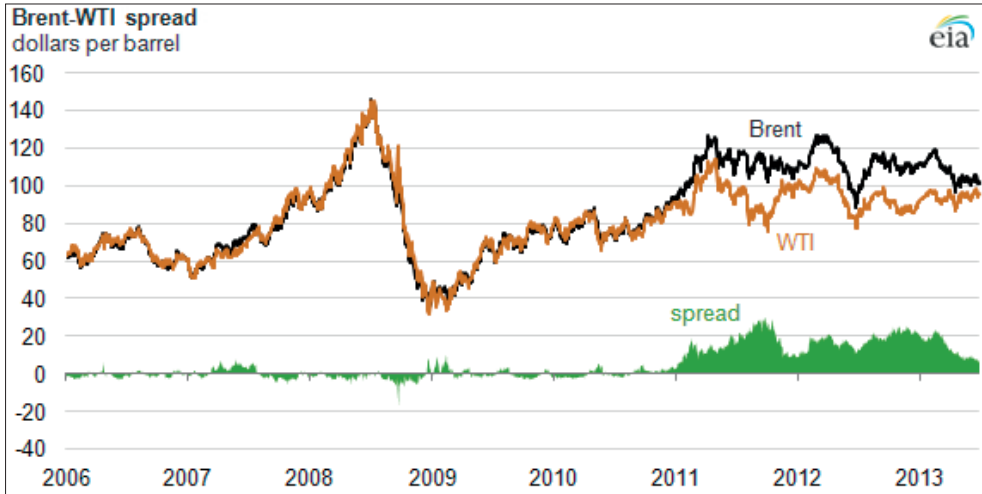


Fig. 1. Brent-WTI spread, source: US Energy Information Administration

It is difficult to determine the shape of the spread between WTI and Brent in the future. Due to significant increase in the oil production from shale formations (shale oil), the supply of hydrocarbons in the United States will steadily increase (which is already the case). This leads to a conclusion that despite infrastructural connections of the US crude oil storage site in Cushing to the south coast of the United States, the additional domestic supply of crude oil to the American market will create downward price pressures and further discount of West Texas Intermediate to Brent. It is therefore clear that one of the challenges to the competitiveness of crude oil refining sector in the European Union is the fact that European refiners have to pay more for the oil than American refineries. Given that both regions, the EU and the US, provide liquid fuels to the global market, it is easy to conclude that the US refining sector companies have more flexibility as regards the pricing of gasoline and diesel supply contracts. The current state of the oil market has also a considerable impact on the existing model of liquid fuels trade patterns between Europe and the United States. For many years there have been a long-term oversupply of gasoline in the EU market, that was historically directed to the U.S. This was due to the technical parameters of the most refineries in Europe that were constructed to produce gasoline rather than diesel.

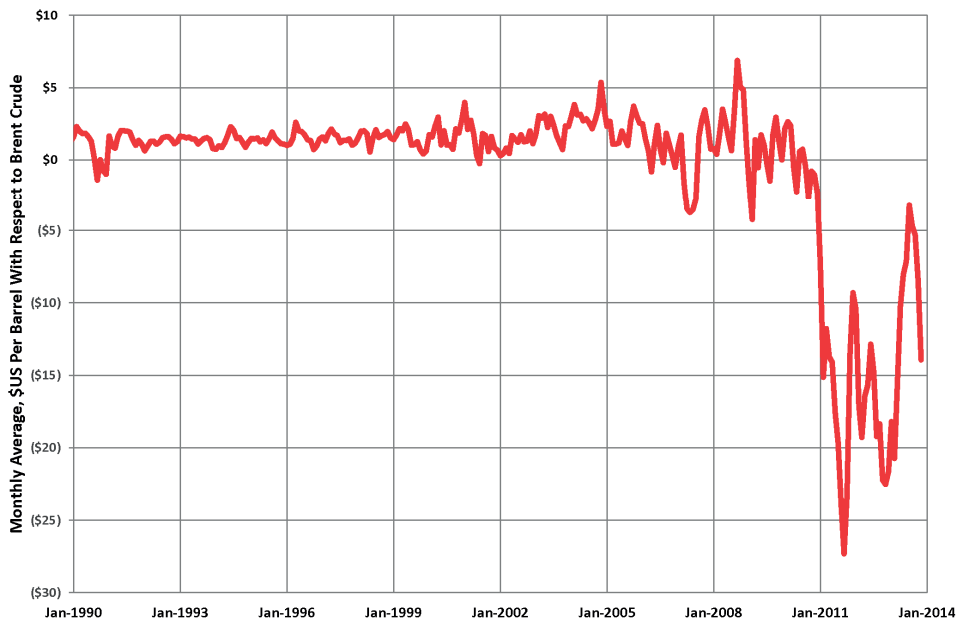


Fig. 2. Monthly Average, USD Per Barrel with respect to Brent Crude, source: Wikipedia

However, some European countries have had a deficit in the supply of diesel fuel on their domestic markets, that was to some point offset by imports from abroad (mainly from the Russian Federation). In the context of the competitiveness of both the abovementioned markets of crude oil refining, it should also be noted that the recent and rapid growth of shale gas production in the United States has caused a significant reduction in American natural gas prices and, as a consequence, the decline of feedstock and electricity cost for the US refineries. In addition, it is worth noting that the economic crisis in the UE Member States sparked a reduction in consumption of liquid fuels (in some regions this was offset by an increase in demand for liquefied gas – LPG – as an alternative fuel).

4. EU LAWS AFFECTING THE REFINING SECTOR IN THE EUROPEAN UNION

The European Commission continues to work on the revision of Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity [5]. The overall objective is to base the excise tax rate imposed on liquid fuels on its energy content and CO₂ emissions. By and large, according to proposed draft amendments to the Directive, this will result in the increase in excise tax imposed on diesel fuel as well as on LPG, which would eventually equalize the balance of consumption of liquid fuels in the EU (that is to say increase the consumption of motor gasoline in the UE

and reduce demand for diesel imported from abroad). The final form of the amendments to the directive proposed by the European Commission is not yet known, but it should be noted that certainly will affect the state of the liquid fuel market in the European Union [6].

Another contributory factor as regards the pricing of crude oil is heavy growth in trading of the so-called 'paper barrels' on commodity markets, mainly on the London Stock Exchange ICE and New York CME Nymex. Organizations involved in the analysis of the oil market and security of supply (such as the International Energy Agency), or crude oil supply side policies (OPEC - Organization of the Petroleum Exporting Countries) differ in terms of reasons for explanation of the rapid growth of Brent and WTI price in mid-2008 (WTI oil set a new trading record above 147,5 USD per barrel on July 14th, 2007) [7]. According to the vast majority of the OPEC member countries, crude oil price volatility was primarily caused by the unprecedented participation of financial investors on commodity markets, and not by factors related to the so-called market fundamentals such as supply and demand side or the level of so-called OPEC's spare production capacity. In turn, the International Energy Agency argued that the state of the market fundamentals is crucial in price formation of crude oil traded on the commodity markets [8]. However, in view of the recent steps taken by the U.S. Administration and the European Commission, it appears advisable to declare that non-market financial participants of the commodity stocks exchange do have some impact on the pricing of crude oil, as the proposals for the adoption of appropriate legal regulations related to their activities have been considered appropriate. First steps in this process were taken by the American Administration in 2010 r. with the adoption of Dodd – Frank Rule providing for the introduction of future participation limits in the trading of crude oil on the commodity markets regarding non-market financial participants [9]. Since 2012, the European Commission, has been preparing a draft legislative proposal to regulate financial benchmarks, primarily LIBOR and EURIBOR, but also the commodity indices. Consultation process has led to the submission by the European Commission of the a legislative *proposal on indices used as benchmarks in financial instruments and financial contracts* on September 18th 2013. In the explanatory memorandum to the EU proposal, it was stated that *'allegations of attempted manipulation of commodity price assessments provided by commodity price reporting agencies (PRAs) are also under investigation by the competent authorities and IOSCO has carried out a review of oil price assessments by PRAs.'* [10]. Ahead of the official publication of this very proposal, in the course of the consultation process, there were hints as to the negative attitude of some agencies collecting oil market pricing data – PRA's Price Reporting Agencies – in relation to EU attempts aimed at increasing the transparency of oil data collection (primarily BRENT oil). Certain comments made it clear that the solutions proposed by the European Commission will result in a significant reduction in the quality of BRENT oil benchmark. As a consequence, some raised the possibility that the pricing of crude oil to the European market will be made under much less clear indicators [11]. Final publication of the legislative proposal by the Commission, did not remove all of the PRAs concerns about crude oil pricing transparency and its impact on the market. However, it should be noted that the steps that the European Commission has taken in relation to the project of a legislative act are probably the first attempt at the creation of binding rules regarding

oil commodity markets including the reporting on crude oil pricing. This can significantly contribute to the reduction of crude oil price volatility. Quite interestingly, on February 18th 2014, the BBC News published an article concerning the possibility of overhaul of Brent oil price benchmark, as raised by the oil market experts. The main reason behind the proposal is the decreasing level of crude oil production in the North Sea. Brent crude benchmark is taken from a basket of just four streams of crude from the North Sea. Another argument in favor of Brent oil benchmark overhaul is a partial redirection of the Russian oil supply from the European market to the Asian market, as well as the increase in demand for oil from the North Sea by Japan and South Korea, that are aiming at diversification of oil supplies due to the existing embargo on Iranian oil imports, thus creating upward Brent oil price pressures. According to the BBC article, there is a possibility to include other streams in the Brent oil benchmark, especially from nearby regions (Algerian, Kazak or Russian streams are priced at the discount to Brent) [12]. Given that 90% of oil imports to Poland comes from Russia, any future changes in the oil price benchmarks data (such as the legislative proposal submitted by the European Commission) affecting the quality of the information provided by the Price Reporting Agencies should be closely monitored by the Polish administration.

5. INITIATIVE OF THE EUROPEAN COMMISSION ON THE REVISION OF EU LEGISLATION AFFECTING THE REFINING SECTOR

In April 2012, the European Commission launched a tripartite formula of meetings with representatives of the refining sector companies and EU member countries government delegates. This was made in order to discuss the problems of the sector and to find solutions to them, with particular regard to the existing provisions of EU law (meetings were held with the participation of the International Energy Agency). The conclusions of the second EU refining forum, that took place on November 27th, 2013 underlined that despite relatively satisfactory levels of refining margins in the EU in 2012 they were at very low levels in 2013 [13]. Moreover, this phenomenon took place despite the fact that the EU refining capacity loss (2008-2013, sixteen refineries in the EU were idle) was at a higher level than the reduction of demand for liquid fuels. With this sort of market conditions, refining margins should increase, however this did not happen mainly due to increased imports of refined products to Europe. Although in the past the refineries in the United States and the EU were exposed to somewhat similar regulatory risk, recently the US refineries access to cheap energy as a result development of gas and oil from shale formations seems to have a negative impact on the refining sector on the Old continent.

One of the steps designed to strengthen the competitiveness of the EU refining companies sector in the European Union is an initiative to carry out so-called pilot horizontal sectoral fitness checks as presented in the European Commission communication 582 published on October 10th 2012 "*A Stronger European Industry for Growth and Economic Recovery*". According to the COM(2012)582, in 2010, as part of its Smart Regulation strategy, the Commission developed fitness checks to assess the overall regulatory framework in a particular policy area.

These checks were designed to identify excessive administrative burdens, examine regulatory overlaps, gaps and inconsistencies and assess the cumulative impact of legislation. Their findings serve as a basis for policy decisions on the future of the relevant regulatory framework. Moreover, the ambition to take an overview of the main policies affecting a single economic sector has not yet been put into effect. The Commission will therefore carry out pilot horizontal sectoral fitness checks. The first two of these will look at petroleum refining (and the aluminium sectors). Both sectors are critical for the EU's industrial value chain, but urgently require new investment to be made in the face of strong international competition. The fitness checks will focus on the implementation and interaction of those policies that are most important for the competitiveness of these sectors [14]. This can include the assessments made by the Member States and submitted on May 15, 2012, during the roundtable on the refining sector in the EU with regard to the cumulative impact of EU policies in the field of refining.

Joint Research Centre of the European Commission is leading the process of the horizontal control of the refining sector, which will deal with the analysis of the law, in particular EU directives: Renewable Energy Directive, the Energy Taxation Directive, the EU Emissions Trading System, Fuels Quality Directive, Directive on Clean and Energy Efficient Vehicles, Industrial Emissions Directive, Strategic Stock Oils Directive, Marine Fuels Directive, Energy Efficiency Directive and Air Quality Directive. According to information from the European Commission, the fitness check of the refining sector will rely on the development of the so-called qualitative and quantitative study of EU legislation conducted in the period from May to July 2014, followed by the presentation of the conclusions and the final report by the European Commission in September 2014 [15]. Importantly, in the course of the fitness check process, the European Commission enabled the refining companies of individual EU Member States to provide information on the possible risks to the security of supply of liquid fuels. Regardless of the abovementioned process, countries such as the United Kingdom, Ireland, Italy and France have conducted individual analysis of the refining sector conditions in order to present conclusions and recommendations for appropriate action. Furthermore, the intention of the Greek Presidency of the EU Council in the first half of 2014, is to initiate the discussion between Member States on prices and energy costs in the EU, with a view to presenting the conclusions while taking into account the competitiveness of the industry [16]. On January 22nd 2014 the European Commission published the communication "A policy framework for climate and energy in the period from 2020 to 2030" [COM(2014) 15] [17].

EUROPIA, the organization of largest companies in the refining sector in the European Union expressed concern, stating that the political framework for period 2020 - 2030 on energy and climate, as proposed by the Commission does not avoid references to the most expensive solutions, as proposed in the EU package published in 2008, mainly by assigning different targets to reach the same objective, by imposing the requirement to reduce greenhouse gas emissions by the EU industry. EUROPIA stressed that the solutions proposed in the Communication will be subjected to a detailed analysis of the sector [18].

Although the representatives of the refining sector have a positive attitude towards the EU refining sector fitness check, they maintain that its aim is to review and analyze the impact of existing EU legislation, leaving aside the future and planned legislative action.

6. OUTLOOK FOR THE REFINING SECTOR IN THE EUROPEAN UNION IN THE CONTEXT OF CHANGES IN OWNERSHIP AND FUTURE INVESTMENT PROJECTS

According to the analysis of the International Energy Agency, by the end of 2012, the level of oil refining has decreased to 15.1 mb/d, and since 2008 some 16 refineries in the European Union have been closed or idled (this accounts for more than 1.7 mb/d capacity loss). The level of capacity utilization in the EU fell from 85% in 2006 to 80% in 2012. According to IEA projections, by 2018 the share of European refinery capacity in the overall level of world refining activity will fall further to 14%. It should be noted that the refinery sector in the European Union is not homogeneous one, as the refineries operating in certain countries have different business market models for their products and various indicators of crude oil processing complexity. On average, two thirds of the European countries are in an overcapacity position when compared with their domestic demand. One third of the countries are both in an overcapacity configuration and present a low refining complexity index. However, the picture is even more scattered when looking at the countries' positioning regarding the middle distillate (diesel) and gasoline demand. Despite refinery shut downs, Europe continues to exhibit a structural gasoline surplus and the current mix of conversion capacity does not address diesel shortfall while still producing gasoline in surplus [19]. As a response to these challenges, in 2013 such countries as Portugal (Galp), France (Gonfreville belonging to the TOTAL group) and Greece (Elfinas) have made investment in installations for hydrocracking, while deep conversion units have been installed in Greece and Spain [19].

Similar investment plans are also considered by the LOTOS Group, in line with the plan of the company reconstruction branded as "Effectiveness and Development 2013-2015." According to the plan, in order to fully exploit economies of the 10 + Program, LOTOS is planning to build a number of new installations that will improve the efficiency of the Gdansk refinery. One of them is Delayed Coker Unit (DCU), which will directly contribute to improving throughput operations. In the future, LOTOS shall be able to significantly reduce the unprofitable production of heavy fuel oil (DCU installation is scheduled for completion in 2017). According to primary calculations, with new LOTOS investments in DCU unit, the refining margins will increase by an additional 2 USD/bbl thus positively affecting the company's financial results. Additional case in point for LOTOS is the falling demand for bunker fuel as a result of new environmental standards of sulphur content [20].

In Spanish and Portuguese refineries the level of crude oil processing has increased recently, which can be attributed to a successful investment plans and an adequate adaptation to market conditions (oil refineries both countries are export oriented). According to the International Energy Agency forecasts, crude oil processing in the OECD Europe will fall only slightly from 15.1 mb/d in 2012 to 15.0 mb/d in 2018. However, the limited domestic demand for liquid fuels in the EU, in conjunction the competitive export of middle distillates (diesel) from the Russian Federation, Asia and the Middle East, accompanied by a dramatic reduction in European imports of motor gasoline by the United States, shall force European refineries further either to cease the operation, or restructure and seek new export markets.

The processes of the European refineries majority stakes acquisition by foreign investors from outside of the EU has been accelerating from 2008. In 2008-2011, the companies expressing interest in taking up shares in the EU refineries were mainly from China, India and Russia. The Lukoil company has acquired stakes in refineries in Burgas (Bulgaria, 100% of the shares), Ploesti (Romania, 100% of the shares), Augusta (Italy, 80% of the shares) and Vlissingen (Netherlands, 45% of the shares). Other companies from the Russian Federation were heavily investing in Germany, for example, Rosneft. The company bought a 50% stake of the Venezuelan PDVSA in the company Ruhroel holding minority stakes in three German refineries - PCK Shwedt, Bayernoil and MiRO and one hundred per cent share in the Gelsenkirchen refinery.

7. CONCLUSION

Current regulatory and market environment expose the EU refining companies to different types of challenges, both internal and external. It seems reasonable to say that the key issue affecting the condition of the EU oil refining sector will be the quality of law regarding this very branch of the industry. One should appreciate the efforts of the European Commission to review both current and future legislation in this regard. The EC should seek appropriate measures and work out solutions to restore the profitability of the sector, and in particular the competitiveness of its operation. Otherwise, Europe will be put at risk of both limited access to crude oil supply and indigenous supply of motor gasoline and diesel, which will negatively influence the EU energy security.

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