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THE KEY INFLUENCES ON THE CROATIAN MARKET OF LUBRICANTS AND MARKETS IN THE REGION

Abstract

Permanent and significant changes are continuous in the lubricants market in Europe and the world, as well as in the small markets such as Croatian and of the neighboring countries in southeast Europe. Trends regarding consumption and demand for lubricants and base oils are unevenly distributed, primarily due to the general global economic laws and of a deep economic crisis that continues in the region. Within the region there are still big differences in terms of quality requirements and of increase-decrease trends regarding consumption after the crisis break out in 2008. The estimates of consumption of lubricants in the region with emphasis on Croatia are presented. Activities of local manufactures of lubricants in terms of expected market growth are evaluated. The influence on lubricants quality, which differs significantly in otherwise close Southeast Europe markets, is discussed. Also, the estimation of influence of the main trends in the Croatian market in the region is given.

Total demand for lubricants in the world, 2010

Renowned monitors of activities of lubricants in the world, mainly agree that the consumption of lubricants in 2010 was 37 million tons. According to these estimates^(1,2) the Asian and Pacific markets still lead in consumption, with 41 % of the world consumption. This is not an unexpected result, especially when it is known that in this region the most of the BRIC countries are. Figure 1 (page 294) shows the estimates of consumption by region in the world for 2010. Regarding estimates for 2011, according to the same sources mostly the stagnation is to be expected, with minor exceptions in some regions. Unfortunately, although it seems positive, at first glance that the consumption of lubricants in the world in 2010 stabilized at 37 million tons, after a large reduction in 2008 and especially in 2009, future estimates are anything but optimistic. In fact, many economic experts, not only in the lubricants business, expect an even worse economic crisis to feature, the peak of which will be during the year 2013 and 2014.

The recovery on the highest level of lubricant consumption formerly achieved at the

beginning of this decade is expected to happen only in 2022. Figure 2 (page 294) shows the trend of lubricant consumption worldwide during the last few years as well as comparison with estimates for the future. At this point no one can predict how far the fall in consumption will go and how many consequences of the crisis there will be, but most observers agree that there will be big and brutal battle in the market, unsuppressed price reduction of final lubricants despite the price growth of crude and generally big changes in the lubricants business.

The consumption of lubricants in Europe

In Europe, with a solid 18 % of the world's consumption or 6.73 million tons in 2010, the rank of countries by spending is still unchanged (Figure 3, p. 295). Forefront as the largest consumer is Russia with 22.2 % then Germany, Austria and Switzerland (DACH) with 16.2 %, etc. It is interesting that in the statistical analysis of Kline& Co.⁽²⁾ for the first time consumption data for Croatia (0.4 %) and Serbia (0.5 %) are presented. The estimates of some local observers partially disagree with this data. In fact, there are estimates saying that the Croatian spending is slightly less, i.e. about 25 000 t, while in Serbia is a lot more, about 32 000 t. All in all, it should be noted that the total consumption in the countries of the former Yugoslavia region, exceeded 85 000 t, but has not yet reached the expected peak of 90 000 t after the crisis in 2009, and it is estimated as unlikely for a long time. When we compare this with the former consumption of 240 000 t in 1989 then we see how it changed over the past twenty years or more.

In terms of the distribution of consumption by types of lubricants in Europe are still leading lubricants and related products for cars with about 53 %, followed by industrial lubricants with a solid 26 %, process oils with the usual 10 % and a group of metalworking fluids and for the temporary corrosion protection with total of 6 %. A pleasant surprise at the end of the estimate is the fat consumption of 5 % which is a quite big increase over last decade (60 %). The reasons for this are definitely new stricter working requirements, changes of technology, growth of some specific industries such as food manufacturing industry, and stricter regulations. Specifically, the increasing consumption of lubricating greases generally does not apply to conventional types of fats such as lithium mineral base, etc., but applies on fats for the food industry, greases of synthetic base and generally greases for specific applications.

Lubricant manufacturer in the world and Europe

As always, there are several sources of data related to the activity of lubricants whereas some estimates do not agree. Here, there is a discrepancy regarding the estimated number of manufacturers in Europe. In fact, the associations of lubricant producers in Europe, in the latest edition ELIDA Directory 2011 states that Europe has about 288 production plants, including the CIS countries and the countries that emerged from the former Soviet Union.

The data are questionable because at least in the current issue, it is said that the UK

has 75 manufacturers of lubricants. Then the locations that are obviously just a warehouse or commercial dealerships or branch, are referred to as drives. Furthermore, some lubricant distributors were probably classified into producers for some reason. More credible estimates are those of Orlen⁽⁴⁾ according to which it is estimated that Europe including the CIS, has a total of 297 plants in 27 countries. The data are probably more accurate because for example it states that in England there are 32 manufacturers, in Germany 47, which is surely more precise in relation to studies of the UEIL. However the main disadvantage is that the two estimates do not mention the existing producers in our region, i.e. the markets in countries that emerged from the former Yugoslavia.

Today, in the region we have a total of 13 manufacturers of lubricants and related products, out of which only in Serbia 8 with a total capacity exceeding 85 000 t/y. In Croatia there are still two major manufacturers: the big company INA and the smaller one Patting with a total capacity (in the first shift) of about 55 000 t/y. In Slovenia from the former 3 the OLMA is the only one that works with a capacity of approximately 10 000 t/y. This does not take into account the capacities of the Termit company that has a small share of highly specialized products for the metal casting industry. In BIH also similar to Croatia there is a bigger manufacturer refinery Modriča and a smaller Tehnosint with the total (current) capacity of 12 500 t/y. In Kosovo there is a smaller decreased production, Balkan Petrol. So it can be estimated that in the frame of former Yugoslavia there is a total of at least 163 000 t/y. Thus one can estimate that in the observed 33 countries in Europe there are 310 manufacturers of lubricants, if the evaluation is made on the basis of the Orlen company, or even 333 if the basis are the UIEL data. The truth is, probably as always in the middle. In any case, the number of producers and the rated capacity exceeds for at least double if not several times the actual needs.

Leading manufacturers and suppliers of lubricants in Central and Eastern Europe

Recently an interesting estimate was published⁽⁴⁾ showing that some large local lubricant producers in countries of Eastern, somewhat Southern Europe and to some extent in some countries of Central Europe are still keeping the pace with big producers. Thus, Figure 4 (page 297) shows that the Polish company Orlen is the largest supplier and manufacturer of lubricants in this part of Europe. The review of the amount of the distribution does not say where the lubricants come from. They come from so-called greatest world producers such as Mobil, BP / Castrol, Shell, Total and others.

It can be assumed that this assessment does not include the data sales / distribution of goods of most listed companies in the Southeastern part of Europe, particularly the Balkans. For comparison, the estimated data on distribution of lubricants of the largest Croatian producer INA and from the countries of former Yugoslavia are added.

Production capacity of base oil

Although recently, there is a trend of closing the plants for production of base oils in Groups I, not only in Europe, the current situation and capacity to invest in new capacity gives a somewhat different picture. Specifically, as shown in Table 1 (page 298), the total capacity of 13 467 million tons in 2010 exceeds at least twice the need for the final lubricants in Europe. This is especially evident in the Group I with the total capacity of 11 387 t, or even 84.6 % of total capacity. Excess production in Europe is relatively easy sold in the countries of Africa and the Middle East, where the chronic shortage of demand of this group of base oils is present. On the other hand, the current lack of base oil Groups II and III in Europe, for several years is covered by supply from the North America and Asia (North Korea). However, the persistent lack of the brighstock concerns. It is estimated that demand will grow, in average 1 % per year and so on until 2020 when we will miss a total of 1 million tons. From this we can conclude that there will be even bigger difference in price of brighstock and the base oil SN150 than it is today. This means that the difference will be greater than 40 USD per barrel (1 barrel \approx 159 L), i.e. the difference will be more than 360 USD per 1 t.

As the shortage of higher quality base oils lasts for while, the development of new capacities and new investments are not stopped despite the financial crisis and the decline in total consumption of lubricants. Table 2 (page 299) shows the current situation with the development of new capacities globally. In Europe, as expected the emphasis is given on the Group III and II, where new capacity are under construction or of existing capacity extend, up to total of 1 050 000 tones. However, the most notable fact is that the biggest investment, also in terms of capacity is in Qatar, where new GTL technology develops. The expected start of the new technology of Shell at the end of 2012, definitely starts a new era in business and lubricant base oils. Specifically the new premium quality base oils GTL technologies will compete not only in quality but also with price to the Group III, and IV (PAO), which will certainly affect on lubricants market with unpredictable consequences.

Other influential factors in Europe and Croatia

Despite the overcapacity in the production of finished lubricants and base oils on the European market, there is still a slight increase in the total number of distributors and sellers of lubricants, at least in Croatia and wider region. In practice this means that more occur than disappear, but more important is that the number of brands of lubricants continues to grow. It is estimated that there are over 200 distributors of lubricants and over 130 brands of lubricants in Croatia. Prices of lubricants and related products are in constant slight upward trend, last few years, despite the occasional sale actions of some companies that are more like the sales of surplus, mainly for hydraulic mineral oil base. Also, several unsuccessful action sales, with a lower price and with the same or similar types of lubricants mainly from companies who are newcomers on the market, did not upset this trend, so far.

Of course, the exception present primarily the tenders of government companies, where the "winning" prices are often lower than the cost of production, at least in the beginning of the contracting period. It is a paradox, and always a difficult decision of sellers in situation where cost of lubricants and base materials are currently still growing despite reduced demand, and when a large insolvency of end customers as well as of the financial instability of lubricant salesman is present. It is obvious that there is currently a very thin line between successful and unsuccessful business and that the responsibility for the company survival definitely lays on the purchasing managers / technologists in production or sales executives. We can assume that perhaps some of these reasons dictated that the company Mobil reduced its number of lubricant distributors in Western Europe, who were apparently chosen by the financial power and market position. On the other hand, business owners and / or principal managers, especially in companies that have completed the transition cycle, or are just a new company on the market in the region, or companies with new management, can complicate the situation or make wrong and disastrous decisions unless they are familiar in detail with the specific market laws.

The good news is that after the crisis in 2009 that a slight increase in sales of passenger cars is observed, where the truth is that a large part of these goes to used cars. It is known that in Croatia, on 1000 people there are about more than 300 cars. It is expected that by the end of 2011 the number of registered vehicles of all types, will cross the figure of 2 100 000. Out of these, more than 74 % of the fleet will be passenger cars, and the average age of the total fleet is 10 years and 3 months⁽⁵⁾. For commercial vehicles the situation in Croatia is quite alarming and is a good indicator of domestic economy failure. In fact, since 2006 the number of newly registered cars decreased more than 60 %. In the first nine months of 2011 the total number of newly registered buses, trucks, tractors, machinery and trailers is 8521 and in 2006 it was 21 670⁽¹⁰⁾. As the majority of registered vehicles are sold on leasing it can be concluded that the largest number of registered vehicles is serviced at authorized service.

This means that in Croatia and wider region increasingly dominated will be sale through specialized service, and less present will be direct sales to end users. Consequently, the sale through many specialized small stores and gas stations will fall, while other sales channels are already quite limited and there is no room for expansion.

On the other hand according the well-known study of OMV⁽⁶⁾ in Croatia almost as in Bulgaria and somewhat more in Romania, 60 % of end-user drivers pay attention to the choice of the lubricants brand. For comparison, In Austria, fewer than 30 %, or Germany, where slightly over 20 % of drivers think about the brands of lubricants. Obviously, Croatia is moving in that direction.

As before there is constantly new demand for quality, but unlike before the lubricant sellers are required to adapt quickly sales programs to the market demands.

New/old lubricants performances demand

For several years, dominating and greatly influencing the activity of lubricants in the world and in Croatia and wider region are the following requirements for the performance characteristics of lubricants and related products:

- use of new materials (e.g. seals),
- stronger specifications and new tests,
- request for minor leakage (oil fill),
- longer service life,
- greater efficiency of the machine-vehicle,
- better filtration systems and oil fill controls,
- improved oxidation and thermal stability,
- improved corrosion protection,
- application of new additive technologies for use in Group II and III base oils,
- compliance with Reach.

However, rarely for the comparison we consider what did these "new requirements" bring so far? Back in 1996, manufacturer VW for GOLF vehicle demanded a mandatory replacement of oil after 1 year and mileage of 15 000 km. From 2010 the same manufacturer for the vehicle of the same class allows the replacement after mileage of 30 000 or 2 years. A second example, in 1991 Opel manufacturer for Astra model requires replacement of oil after 5000 km or replacement after only 6 months of driving, while in 2010 the demanded replacement is after 30 000 km or 1 year. At the same time we must bear in mind that the new modern petrol engines have increased power and speed, they possess modern systems of controlled direct injection, improved efficiency, etc. Also it is to remember that new modern diesel engines have improved direct injection system, an optimized system with supercharging and compressor system, complex systems of Exhaust Gas Recirculation (EGR), DPF and more other systems according to the new requirements of environmental protection, etc. Furthermore, the upper working temperature of the oil is no longer occasionally up to max +120 °C, but often more than +140 °C.

All this was possible due to the application of higher quality base oils and high quality "low SAPS" additive package in a modern formulation of lubricating oil. Unfortunately, for consumers it caused a higher cost formulation, raw materials and finally finished lubricants. On the other hand, without superfluous commentary, let examine messages from promotional materials for the first all-electric vehicle with zero-emission Nissan Leaf, named car of the year in Europe:

- there is no exhaust pipe (no emissions),
- does not use motor oil,
- do not use lubricants for gear transmissions,
- do not pay tolls and taxes and other customary for conventional vehicles (in most European countries),
- does not consume fuel,
- sale price is below 30 000 Euros.

At the very least, we can say that the industry is warned, both for the future of conventional vehicles and the use of very expensive and high-quality lubricants and related products for conventional vehicles.

The impact of the global economic crisis on the consumption of lubricants in industry

Consider the situation and the consequences of the economic crisis of the metalworking fluids (MWF) because they are unique and distinctive indicator of industrial growth, and overall trends related for industrial lubricants

The hardest hit of the last economic crisis, culminating 2009/2010 occurred as we know, in the automotive industry and shipbuilding. Due to the decline in production of passenger cars, trucks and other transportation vehicles there was a decline in demand for base metals as well as for various industrial metal products, including other lubricants that are used in vehicles production. We have already mentioned the fall in the consumption of lubricants globally for the period from 2008 to 2010.

The worst situation regarding lubricants was related to the metalworking fluids, i.e. lubricants for the treatment of metal removal (removing particles), metal processing and deforming and temporary corrosion protection and other fluids, and as already mentioned, during 2008-2009. However, the turning point for most European markets, primarily in metalworking fluids occurred during 2010. Then the observed increase in spending was total of 2.2 %, i.e. amounted 491 700 tones⁽⁷⁾.

Key factors in the recovery of metal-processing industry

There are several reasons that have dictated a relatively quick recovery of metal-working industry in developed countries of Europe. These are:

- national stimulating economic programs for the automotive industry,
- concerns and requirements for occupational health and human safety and the environment protection,
- the impact of the REACH regulation which is more favorable to European producers rather than those outside of Europe,
- long-term orientation to the implementation of efficient maintenance in the industry,
- the introduction of a larger program for the optimized management of the working fluids for metalworking (fluid management) and other lubricants industry,
- implementation of new state regulations aimed at recovery of the industry,
- greater use of new technologies (systems with minimal lubrication, dry lubrication processing technology),
- increased use of long-term, premium MWF and other new technologies,
- increased application of recycling program for used metalworking fluids,
- long-term business orientation to reduce the cost of production.

Specific trends in the metalworking industry

Metal processing industry is a specific industry, and although it depends a lot on the impacts of the automobile and aircraft industries and related industries, there are some special laws that significantly affect it.

Specifically, end-users of metalworking fluids need an increased performance in operating condition technical support services and external maintenance. On the other hand, the regulations to protect health, safety, the environment are stricter, force the lubricant formulator to apply new types of base oils and additives in an attempt to eliminate potentially harmful components. Consequently all the mineral base components are used less, Group II base oil, PAO, and other synthetic components have become standard components of the formulation.

Thus, conventional mineral base oils are less used. New technologies and specific processing requirements have caused that almost every single metalworking operation requires specially developed, patented formulation.

Regarding the end-user in metalworking industries these trends in the lubricant business also have positive effect on:

- reduce production costs,
- reduce downtime,
- extend oil drain intervals,
- increased continuity of production,
- reduction in time to maintain,
- the improvement of lubrication plans,
- introduction of new technologies, monitoring of oil-filling.

However, key prerequisite for end-users to achieve these listed benefits is the need of closer relationship with the manufacturers / suppliers of lubricants. Metal processing industry has become aware of a need for better technical support, and often external maintenance services (outsourcing).

All of the above has enabled a wide area for specialized suppliers (niche players), who gradually gain advantage in the market before the well-established multinational oil companies. Namely, the world's leading corporations are not only poorly equipped for this level of customization and direct sales support and technical service to end users, but are less interested in this product category. On the other hand, the market for traditional metalworking fluids is changing around the world, not only in terms of technology and formulation, but also by geographical regions.

In Europe, exceptions are Germany and the United Kingdom, where we recorded the growth of spending of 35-22 %, in the Czech Republic in the last few years there is a constant growth over 40 % (cheap labor in relation to the EU). However, for the rest of Europe and other Western markets the current prognosis is not good. It is therefore logical that the industrial production in some areas is completely at once moved to the East and other continents, opening new markets and opportunities for progress in places like India and China (BRIC).

Trends of MWF in the world by region

Demand for metalworking fluids was in 2010 about 2.1 million t, or about 5.6 % of the world demand for lubricants. Figure 5 (p. 304) shows the trends in consumption of metalworking fluids in world's regions based on comparisons of consumption in 2007 and 2010⁽⁸⁾. It is obvious that the Asian countries lead in terms of consumption, not only because of the size of the market but also because of low-cost labor, which favors the development of metal processing industries. It is necessary to highlight that the growth of demand from 601 000 t to 634 000 t in Europe, due to above mentioned reasons and the obvious decline in demand in North America from 775000 t to 625000 within the observed interval of 4 years.

Leading MWF suppliers / producers in Europe

Pursuant to these changes in the metal processing industry and in the general activities of metalworking fluids, there was a change in the relationship and position of the leading suppliers and manufacturers in the market. Figure 6 (p. 305) gives an overview of the leading suppliers at the beginning of 2010. One can notice immediately a big change at the top. Namely, in 2010 the company BP / Castrol leads with 61 500 t of products supplied, followed by Fuchs, Houghton and Queqer, while Shell was the head of another group of secondary suppliers. Houghton Company at that time already jumped a bit on the scale, because it took over the company Stuart, a great "player" until recently. However, after consolidation and harmonizing the sales-production program and closure of the excess production and development capacity, new changes were about to happen. In fact, the leading Houghton bought up the production (sales) of metalworking fluids from Shell.

By the way Shell made another strategic decision to sell their activity of producing lubricants for the food industry to the company Fuchs. The current situation, based on the assessment in the middle 2011, is shown in Figure 7 (p. 305). It remains to be seen whether the Houghton will increase this impressive rate of production of 100 000 or at least maintain it, and which are further intentions of a current world leader in the manufacture and development of metalworking fluids.

Conclusions – predictions

- The current trend of decline in consumption of lubricants in the world has stopped.
- The stagnation of consumption is present in Croatia, Central and Southeastern Europe, but partially globally, too.
- The total production capacity of lubricants and base oils in Europe far exceeds the need for lubricants.
- Large lubricant manufacturers are giving more attention to the markets in Eastern and Southern Europe.
- The trend of growth is still present by the number of distributors and brands in the so-called emerging markets (e.g. Croatia and surrounding markets).
- Middle and lower lubricant manufacturers must address numerous issues related to the economy of business and increasing demands for quality-driven and full technical support service.

- New technologies and new quality demands continue to affect significantly the development costs and the cost of the final formulation of lubricants.
- There is a growing use of synthetic components and some oil companies do not see long-term interest in "synthetic" lubricants and some segments of lubricants business.
- Specialized vendors (niche players) gradually provide advantage before the multinational oil companies and are becoming the leading specialist suppliers.
- End-users in industry increasingly need technical support and outsourcing maintenance services.
- Lubricants industry for vehicles must be prepared for the unstoppable and unwanted changes.
- New global economic crisis (2012-2014) will have (un)foreseen and dramatic consequences on the increasing number of manufacturers of lubricants, and as or accompanying results or first syndrome of crisis will be (further) increase of the lubricants supplies and lubricants price reduction on all markets.

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621.892	maziva	lubricants
621.892.6	tekućina za obradu metala (TOM)	metalworking fluid (MWF)
380.134	tržišni razvoj i predviđanja	market development and forecast
.001.6	gledište industrijskog restrukturiranja i tehnološkog razvoja	industry restructuring and technology development viewpoint
338.974	gospodarska kriza	economic crisis
(497.13x194.2)	Hrvatska i zemlje u okruženju	Croatia and surrounding countries
(100)	svijet	world
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