Overview of the European Lubricant Demand

A presentation at:

2014 European Base Oils & Lubricants Summit
17-18 Sept. - Alicante, Spain

Alicante, Spain

17 September, 2014
About Kline & Company:

Kline is a respected provider of world-class consulting services and high-quality market intelligence that consistently lead to client successes in growing or improving their business.

Corporate Overview:

Our focus is on providing solutions throughout the entire value chains of the industries we serve. We are large enough to have the blend of functional capabilities, industry experience, and geographical spread that successful projects require, yet small enough for clients to get our individualized full attention.

Our Philosophy:

Our purpose is to help our clients succeed and our philosophy is built around this. Our clients value our people and the working relationships they form while working together.
Study Background

- This presentation is based on Kline’s global series of including:
  - Global Lubricant: Market Analysis and Opportunities”
  - “Global Lubricant Basestocks: Market Analysis and Opportunities”

- This presentation will provide an overview of synthetic lubricant demand and growth in key regions including Europe, North America, and providing a focus on selected emerging countries (Brazil, Russia, and China)

- All base year data refers to 2013 and projections to 2023. All market numbers are in kilotonnes.
Global lubricant demand is estimated at 39.2* million tons in 2013, a growth of 1% over 2012.

**Global Lubricant Demand by Product Type, 2013**

- HDMO: 22%
- PCMO/MCO: 21%
- PO: 15%
- HF: 9%
- Other auto: 9%
- IEO: 6%
- GIO: 8%
- MWF: 6%
- Grease: 3%

**Global Lubricant Demand by Region, 2013**

- Asia: 43%
- Europe: 17%
- NA: 25%
- AME: 8%
- SA: 7%

Total: 39.2* Million Tons  
(Preliminary estimate)
How has the global lubricants market performed through the recession?

Global lubricants demand growth has generally tracked global GDP growth, but with greater volatility.

Global lubricants demand in 2013 has nearly recovered to the high water mark set in 2007.

* - Real GDP at market exchange rates.
From a variety of indicators, the message is clear – 2013H1 was bad for most of Europe’s major economies with a few exceptions.

### Growth in 2013 H1 vs. 2012 H1

<table>
<thead>
<tr>
<th>Country</th>
<th>CV*</th>
<th>PC*</th>
<th>Steel prod</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>-10.2%</td>
<td>-8.1%</td>
<td>1.6%</td>
</tr>
<tr>
<td>UK</td>
<td>7.2%</td>
<td>10.0%</td>
<td>-17.2%</td>
</tr>
<tr>
<td>Italy</td>
<td>-19.5%</td>
<td>-10.3%</td>
<td>17.3%</td>
</tr>
<tr>
<td>Spain</td>
<td>-6.0%</td>
<td>-4.9%</td>
<td>-1.1%</td>
</tr>
<tr>
<td>France</td>
<td>-9.4%</td>
<td>-11.2%</td>
<td>4.5%</td>
</tr>
</tbody>
</table>

SOURCE: www.acea.be, Markit Economics, PMI Survey

- Retail sales in Eurozone grew for the first time in August 2013. Strong growth in Germany, modest in France.

- In Germany manufacturing PMI rose to two year high and services PMI is the highest in six month.

- French and Italian manufacturing PMI turned to growth in July 2013.

- Tough Spain continued to decline, the trajectory suggest it will return to growth shortly.

- Among other countries Poland has also returned to growth, Turkey continues to stagnate, and contraction in Greece has slowed down.

*CV = commercial vehicle registrations
*PC = passenger car registrations
While things appear unchanged on the surface, a significant realignment of regional shares has occurred.

European share in global lubricant demand has declined from about 24% to 17%. In contrast, Asian share in global lubricant demand has grown from 33% to 43% in the last five years.
Most European countries have experienced a significant contraction in demand during the recession.

The contraction in demand in major countries accelerated Europe’s reducing share in global lubricant demand. The situation has not changed in 2013.

**Europe Lubricant Demand Growth By Major Countries (2008-2013), CAGR %**

[Chart showing lubricant demand growth by major countries in Europe, indicating significant contraction in demand.]

- Turkey
- Russia
- Poland
- Germany
- Benelux
- France
- UK
- Iberia
- Italy

- Major markets
- Other
Despite the contraction in the last five years, the top five lubricant markets in Europe account for nearly two-thirds of the region demand.

Europe Lubricant Consumption by Country, 2013

- Russia
- Germany
- UK
- France
- Italy
- Turkey
- Iberia
- Ukraine
- Benelux
- Poland
- Minor

Total: 6.6 million tons
In contrast to its position in the overall market, Europe accounts for the highest share of the global synthetic and semi-synthetic lubricant demand.

Regional Share in Global Lubricant Demand by Product Type, 2013 (%)

- Semi-synthetic
- Synthetic
- Mineral
- Total

Note: Excludes Process Oils.
Germany leads in penetration of synthetic and semi-synthetic lubricants.

High penetration of synthetics coupled with demographic factors makes Europe a declining market even without other economic factors.

**Synthetic and Semi-synthetic Lubricant Penetration by Country, 2013 (%)**

- **Germany**: High penetration of synthetic lubricants.
- **France**, **UK**, **Italy**, **Poland**, **Benelux**, **Russia**, **Turkey**: Lower synthetic penetration, with significant conventional oil usage.
- **Other**: Mixed usage, with higher penetration in synthetic and semi-synthetic categories.

Note: Excludes Process Oils.
What drives lubricant market in Europe?

- Increased lubricant consumption due to:
  - Economic recovery
  - Manufacturing recovery
  - Changing regional base oil supply

- Other factors include:
  - Socio-economic trends
  - Lubricant quality improvements
  - Focus on fuel economy and CO₂ reduction
Europe is projected to show improvement in economic growth rate.
Going by the purchasing manager index, most European countries are experiencing growth in manufacturing.

<table>
<thead>
<tr>
<th>Country</th>
<th>February</th>
<th>January</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>53.0</td>
<td>54.1</td>
<td>54.1</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>56.5</td>
<td>55.9</td>
<td>54.7</td>
</tr>
<tr>
<td>Euro Zone</td>
<td>53.2</td>
<td>54.0</td>
<td>52.7</td>
</tr>
<tr>
<td>France</td>
<td>49.7</td>
<td>49.3</td>
<td>47.0</td>
</tr>
<tr>
<td>Germany</td>
<td>54.8</td>
<td>56.5</td>
<td>54.3</td>
</tr>
<tr>
<td>Greece</td>
<td>51.3</td>
<td>51.2</td>
<td>49.6</td>
</tr>
<tr>
<td>Ireland</td>
<td>52.9</td>
<td>52.8</td>
<td>53.5</td>
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<tr>
<td>Italy</td>
<td>52.3</td>
<td>53.1</td>
<td>53.3</td>
</tr>
<tr>
<td>Netherlands</td>
<td>55.2</td>
<td>54.8</td>
<td>57.0</td>
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<tr>
<td>Poland</td>
<td>55.9</td>
<td>55.4</td>
<td>53.2</td>
</tr>
<tr>
<td>Russia</td>
<td>48.5</td>
<td>48.0</td>
<td>48.8</td>
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<tr>
<td>Spain</td>
<td>52.5</td>
<td>52.2</td>
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<td>Turkey</td>
<td>53.4</td>
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<td>53.5</td>
</tr>
<tr>
<td>U.K.</td>
<td>56.9</td>
<td>56.7</td>
<td>57.2</td>
</tr>
</tbody>
</table>

Source: www.markiteconomics.com
Example – Impact of growing synthetic and semi-synthetic products on overall PCMO demand.

Vehicle Population and PCMO Consumption Growth in Select Countries*, 2011-2023

Vehicle population
PCMO demand
Synthetic and Semi-synthetic PCMO demand

All data expressed as ratio of 2011 value
* - Russia, Germany, UK, France, and Italy
Emphasis on fuel economy, and a modernizing vehicle park, will drive an increase in the use of lighter viscosity PCMOs.

HDMO market will see moderate movement to lighter viscosity oils.

PCMO Grade Shifts in Europe, 2012 to 2022

HDMO Grade Shifts in Europe, 2012 to 2022
While overall baseoil supply in Europe will be flat, share of Group II and Group III will grow rapidly. This will impact blending approach in the region and drive a further expansion of synthetics.
Lubricant consumption in Russia and Germany will drive demand in Europe

<table>
<thead>
<tr>
<th>Country</th>
<th>Lubricant Demand Growth, CAGR % (2013-2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>-2.0</td>
</tr>
<tr>
<td>Germany</td>
<td>-1.5</td>
</tr>
<tr>
<td>UK</td>
<td>-1.0</td>
</tr>
<tr>
<td>Iberia</td>
<td>-0.5</td>
</tr>
<tr>
<td>France</td>
<td>-0.5</td>
</tr>
<tr>
<td>Italy</td>
<td>-1.5</td>
</tr>
<tr>
<td>Benelux</td>
<td>-2.0</td>
</tr>
</tbody>
</table>

Largest European Lubricant Market:
- Germany
- Russia
- United Kingdom
- France
- Italy
The net impact of these market drivers will be a flat lubricant market in Europe.

In the optimistic scenario, the overall demand will be flat with growth in some countries compensating the contraction in others.
European lubricant is a mature market but opportunities can still be pursued in various segments

- Opportunities in Europe are not volume growth based, rather the growth that is expected to come from lubricants in the high performance categories

- Market opportunities exist at both ends of the product spectrum – synthetic engine oils and industrial lubricants– but present different challenges

  - Europe continues to be the largest market for high quality / high performance lubricants as measured by penetration of synthetics and low viscosity engine oils.
  - Synthetic will grow 3x to 2x times faster than overall market
  - Growing availability of Group II and Group III in this region will aid this trend
  - Group III supply in the region will expand significantly creating growth for Group III based synthetic products.
  - In the industrial segment food-grade products showing biodegradability credentials, but also fire resistant oils will continue to grow
European lubricant is a mature market but opportunities can still be pursued in various segments

- To spot opportunities, lubricant marketers need to look beyond the Europe region as a whole. Opportunities exist at the country market level. Marketers need to think in terms of which market segment is addressable and which is not.
  - Lubricant marketers in Europe will need to look towards Eastern Europe and East of the Suez for organic growth opportunities

- Global reach, flexibility, quality consistency, strong reputation and reliability are key factors to succeed.
Questions or comments?
**Kline** is a worldwide consulting and research firm dedicated to providing the kind of insight and knowledge that helps companies find a clear path to success. The firm has served the management consulting and market research needs of organizations in the chemicals, materials, energy, life sciences, and consumer products industries for over 50 years. For more information, visit www.KlineGroup.com.

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