

Competitive Analysis of the Global Lubricant Basestocks Industry 2009

1st Edition

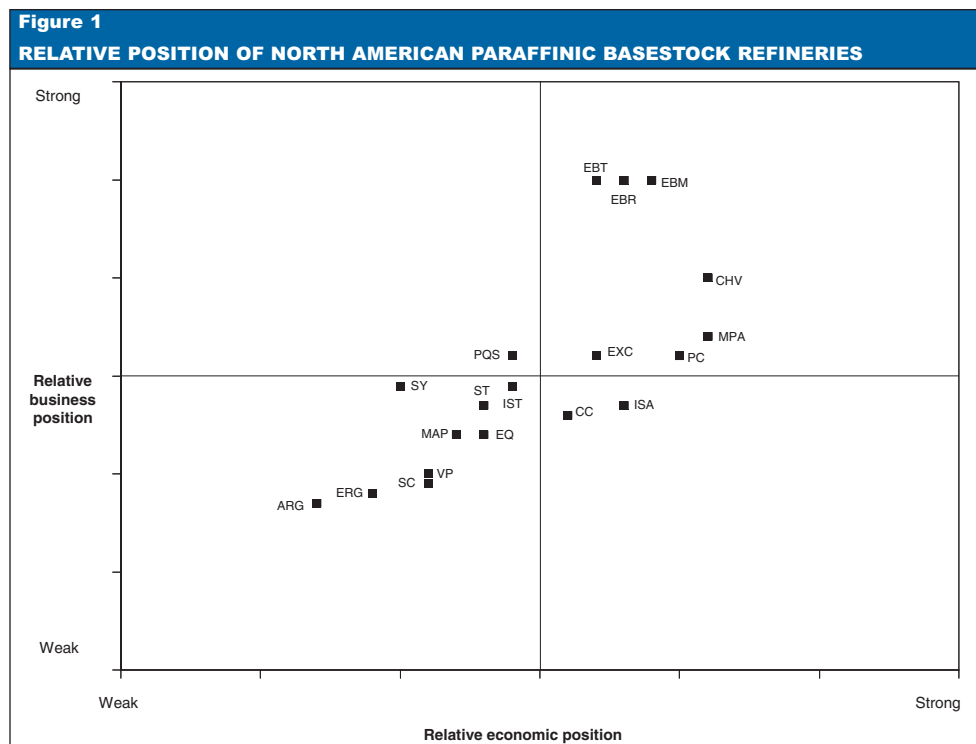
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Base Year: 2008

A comprehensive analysis and assessment of the manufacturing costs, technologies, and the economic viability of all leading lubricant basestock refineries globally. The study is of particular value to those refiners considering refinery closures/shutdowns, expansions, or investment in new grass-roots refineries.

Report Scope

The study is truly global in scope and looks at all refineries producing paraffinic and naphthenic base oils globally. API Group I, II, II+, III, V and GTL refineries are analyzed, and each refinery's cost position is plotted within the region and by API base oil category. An example of the relative position of refineries within a region is shown in Figure 1.



Key Benefits

The study is designed to provide subscribers with an accurate and independent appraisal and competitive analysis of all lubricant basestock refineries. It is an invaluable resource for:

- Basestock refiners
- Finished lubricant marketers
- Refinery engineering/construction firms
- Private equity firms/financial analysts

The study is an excellent resource to use in understanding the cost structure and economic viability of your business and that of your competitors. In addition to a detailed analysis of current and potential technologies and manufacturing costs, it offers Kline's insights on the strategic intent of each refinery owner and the viability of each refinery in their portfolio.

The advent of the first commercially available gas-to-liquid (GTL) basestocks will also be of a particular interest to industry participants, as this might accelerate the shutdown of certain high-cost refineries. This will have an impact on supply and, therefore, on pricing in the future as well.

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1. INTRODUCTION

2. EXECUTIVE SUMMARY

3. SUPPLY AND DEMAND DRIVERS

- Refinery operations
 - Current basestock slate and capacity
 - Technology
 - Expansion and debottlenecking plans
 - Flexibility
 - Environmental issues
- Increasingly stringent performance specifications in automotive and industrial lubricants
 - Fuel economy
 - Emissions
 - High temperature/high shear
 - Low-temperature performance
 - Oxidation stability
- OEM design trends
 - Lube oil sump capacities
 - On-board oil change indicators
 - Fill-for-life systems
- Maintenance practices
 - Oil change intervals
- Macroeconomics
- Vehicle equipment population trends
- Finished lubricant and basestock pricing
- Additive technology
- Market penetration of synthetic and semi-synthetic lubricants

4. MANUFACTURING TECHNOLOGY ASSESSMENT

For each refinery, the following information is provided:

- An assessment of the technology employed
 - Solvent extraction (furfural, NMP, phenol)
 - Hydrocracking
 - Dewaxing (MEK/toluene, catalytic dewaxing, dill chill, Isodewaxing)
 - Finishing (hydrofinishing, clay finishing, bauxite percolation)
- Process flow schemes
 - Units used in the basestock manufacturing processes
- A summary of each refiner's current market position, with a discussion of such issues as:
 - Ability of the refinery to meet more stringent performance specifications
 - Environmental issues
 - Expansion plans
 - New technologies the refiner views as favorable

5. MANUFACTURING COST ASSESSMENT

This chapter provides a profile of each refinery that will cover:

- Basestock capacity by type and grade
- Capacity utilization
- Environmental issues
- Future plans

An example of the cost data provided in this chapter is provided in Table 1.

6. ECONOMIC VIABILITY ANALYSIS

A detailed consideration and analysis of factors other than costs that affect the viability of a refinery in the long run, including:

- Capacity
- Captive demand
- Quality of existing production
- Production of related products such as waxes and bright stocks
- Required environmental investments

7. INDUSTRY COMPETITIVE ANALYSIS

This chapter consolidates and analyzes the information provided in the previous chapters to determine which refineries are at risk under alternative scenarios, such as the changing prices of crude, catalyst cost, or supply and demand balance.

8. SUPPLIER PROFILES

This chapter includes the profiles of each leading base-stock refiner, including capacity and volumes produced by API and viscosity grade.

9. APPRAISAL AND OUTLOOK

This chapter discusses the opportunities and threats that might emerge from this analysis and what the future might look like should all these forecasts be realized. This chapter also includes Kline's thoughts on what these developments will mean to each subscriber. This information is customized for each subscriber.

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Table 1: Manufacturing Cost Assessment for Refinery "A"

Cost Item	Base case	Input	Factor		
Base Oil, BPD	16000	16000.0	1.00	Cost, \$/bbl	100.33
Capital Investment, \$MM	300.0	300.0	1.00	Revenue, \$ MM	689.47
OSBL Capital, \$MM	120.0	120.0	1.00	Cost, \$ MM	549.01
Working Capital, \$MM	131.3	131.3	1.00	Gross margin, \$MM	140.46
Interest on WC, %	6.00	6.00	1.00	ROCE, %	33.44%
Av. Product price, \$/BBL	126.0	126.0	1.00		
Utilization, %	95.0	0.9500	1.00	Byproduct price factor	1.00
VGO price, \$/Bbl	75.6	75.6	1.00		
GSA, %	4.00	4.00	1.00		
REPLACEMENT CAPITAL COSTS	\$ Million			BASE DATA	
Direct capital costs	300			Base oil capacity, BPD	16,000
Indirect capital costs	120			Utilization, %	95
Total fixed capital	420			Production, BPD	15,200
				Location	U.S. Gulf Coast
Asset value	126	30%		Year of operation	2007
				Product	Base Oils
Working capital	\$131.3				
OPERATING COSTS	Units	\$/Unit	Unit/BBL	\$MM/yr	\$/BBL
Raw materials					
VGO	BBL	75.60	1.68	704.92	127.06
Hydrogen	1,000 scf	3.03	0.10	1.68	0.30
By-products					
Wax	BBL	(86.40)	0.18	(84.59)	(15.25)
Extract	BBL	(61.20)	0.50	(171.20)	(30.86)
Net materials				449.14	80.95
Utilities					
Electricity	Kwh	0.10	10.00	5.37	0.97
Fuel	MMBtu	6.00	0.20	6.66	1.20
Steam	1,000 lb	8.90	0.30	14.82	2.67
Solvents	\$	4.62	0.30	7.69	1.39
Total utilities				34.53	6.22
TOTAL VARIABLE COSTS				485.35	87.48
Labor Costs					
Operator:	36	\$/yr:	66,000	2.38	0.43
Salaried:	8	\$/yr:	92,400	0.74	0.13
Plant overhead:		\$/yr:	-	-	-
Benefits (% of wages)			45	1.40	0.25
Total labor costs				4.52	0.81
Maintenance costs (% of direct capital costs)			4.0%	12.00	2.16
General overhead (% of total labor costs)			65%	2.94	0.53
Insurance (% of total fixed capital)			3.0%	3.78	0.68
Interest on working capital	6%			7.88	1.42
TOTAL FIXED CASH COSTS				31.11	5.6
TOTAL CASH COST				516.46	93.09
Depreciation: based on book value@ straight line for 10 years				12.60	2.27
GS&A (% of sales revenue)			4%	27.58	4.97
TOTAL MANUFACTURING COST				556.64	100.33
TOTAL MANUFACTURING COST, ¢/gal					238.88
TOTAL CASH COST, ¢/gal					221.64
CASH OPERATING COST, ¢/gal					23.17
CASH OPERATING COST, \$MM/yr					54.0
DCF, %					33.4%

NOTE: Dummy data used for illustrative purposes only.

Methodology

Kline is unmatched in our ability to gather hard-to-get market and competitive intelligence with a high degree of confidence. Kline's market analysis approach places the principal emphasis on primary research techniques to ensure that the foundation of business intelligence and insight is accurate, current, and reliable.

During the course of field research, Kline's professional staff of industry experts conducted in-depth discussions and personal interviews with a wide range of knowledgeable industry participants and opinion leaders. This approach has proven to be the most effective and reliable approach to obtaining accurate market data, capturing expert insights, and identifying business opportunities.

Primary research represents the bulk of our research efforts. The analysis is completed by a team of experienced professionals from Kline's Energy, Econometrics, and Manufacturing Cost Economics practices.

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- Global Lubricant Basestocks Annual Service
- Global Lubricant Additives 2008: Market Analysis and Opportunities
- Competitive Intelligence for the Global Lubricants Industry (published annually with ten-year forecasts)
- LubesNet Global Lubricant Database Annual Service
- Global Synthetic Lubricants 2008: Market Analysis and Opportunities

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