

# Assessment of the specialty oil industry in India and Global

**Gandhar Oil Refinery India Ltd**

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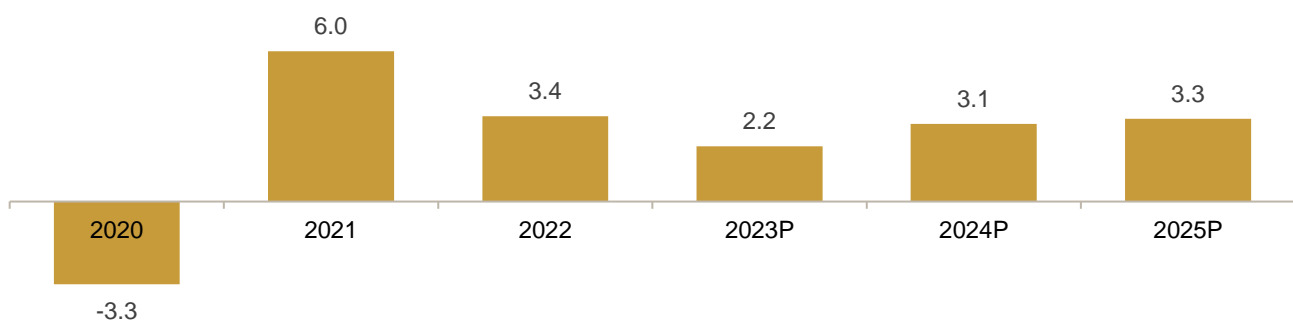
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## 1 Global economic outlook

- Global gross domestic product (GDP) growth is projected to grow at 2.2% in 2023. S&P Global has lowered its growth forecasts for period 2023 and 2024 and raised forecasts for inflation. Rising rates, increased European energy insecurity, and the lingering effects of COVID-19 are hitting growth almost everywhere; Asia-Pacific remains a relative outperformer.
- The Russia-Ukraine war seems to have entered a phase of attrition, and while the conflict hasn't yet spilled over to neighbouring countries, the risk of miscalculations, mistakes, or other unexpected events is as high as it's been since the end of the Cold War more than 30 years ago. Financial conditions are currently tightening as central banks raise rates quickly, foreshadowing slower growth. Most leading and sentiment indicators are pointing toward slower growth as well.
- Eurozone is forecast to take the biggest hit to growth from the war, given its proximity to the war zone and higher exposure to volatile global energy costs. S&P Global expect a sharp slowdown in eurozone growth in 2023. An unprecedented deterioration in the terms of trade has pushed inflation to record highs. Western Europe will avert a severe recession as energy conditions improve. S&P Global still forecast a mild, two-quarter recession as high inflation erodes household incomes and financial conditions tighten. Yet, the risk of severe, energy-induced contractions in output has decreased thanks to temperate early winter weather, high natural gas storage levels, and lower energy prices.
- Asia-Pacific will be a bright spot in the global economy in 2023. S&P Global assumes that domestic resilience and solid growth in mainland China--albeit off a weak base--will keep regional growth at a healthy level. Strong consumption in the more domestically led economies of India, Indonesia, and the Philippines will also lift the average.
- Most Asia-Pacific countries have internalised Covid-19 and seem to be gaining pace in industrial activity. But they remain affected by volatile commodity prices. Core inflation has shot up in some Asia-Pacific economies, less so in others. It has soared in Australia, South Korea, and New Zealand and has remained high in India. On the other hand, it has stayed low in China and Japan and modest in Hong Kong, Indonesia, Malaysia, Taiwan, and Thailand

### 1.1 GDP outlook for 2023-2025

Figure 1: Expected global GDP growth rate (%)



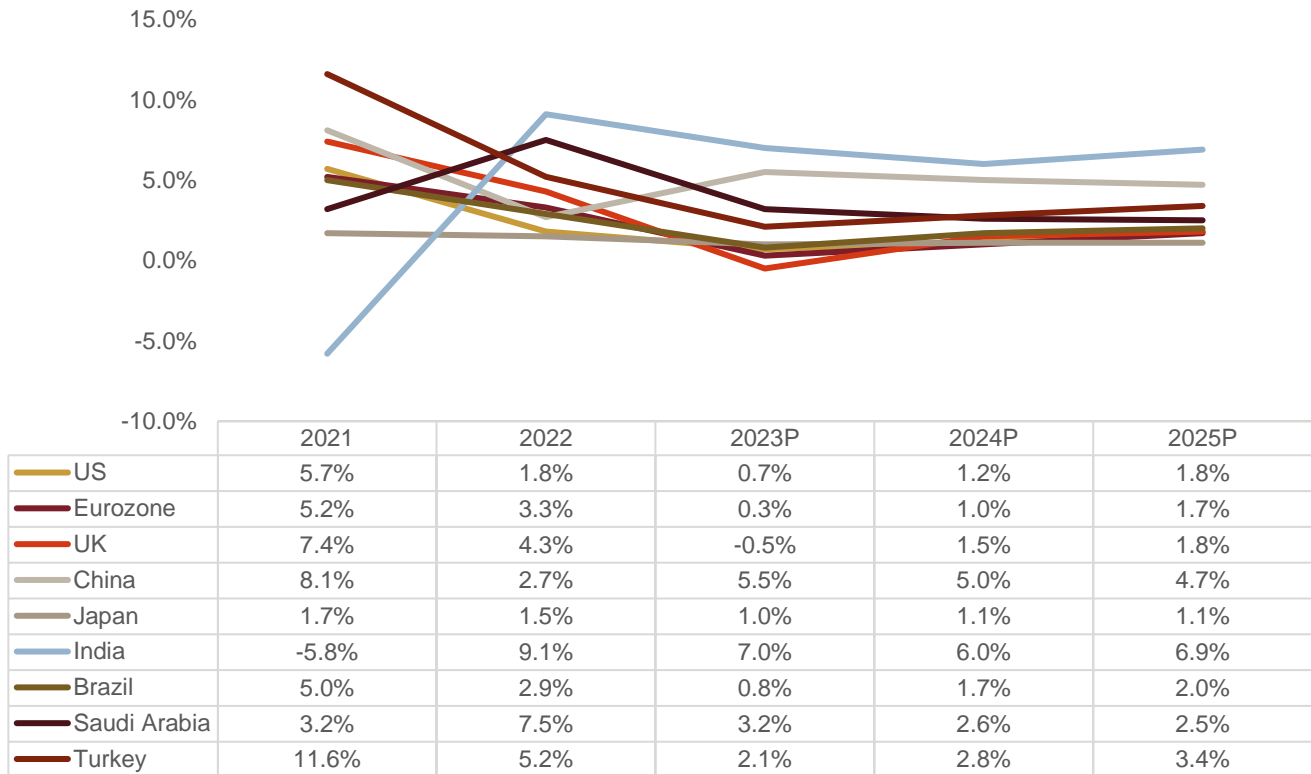
P: Projected

Note: Data for calendar year

Source: S&P Global, Oxford Economics

## 1.2 GDP growth trend across major economies

Figure 2: GDP growth projection



Note: Fiscal year for India's GDP growth outlook, calendar year for other countries

Source: S&P Global (Q2, 2023 Global Outlook), CRISIL MI&A Consulting

Table 1: Growth outlook of major economies

Country	Growth outlook
<b>US</b>	S&P Global forecasts GDP growth at 1.8% for 2022 and 0.7% for 2023, as it expects the economy to fall into a shallow recession in the first half of 2023. Inflation likely peaked in third quarter of 2022 but will remain high on continued supply-chain disruptions. The US Federal Reserve (Fed) is expected to keep monetary policy tight until inflation begins to moderate in the second half of 2023.
<b>Eurozone</b>	The war between Russia and Ukraine is wreaking havoc on the global economy just as Covid-19 is winding down. S&P Global expects the eurozone to be hit hardest by the war, with higher energy prices as the key trigger of growth slowdown. We expect consumer price inflation to reach 5.9% this year and will be 2.7% in 2024 on the back of higher energy and food prices resulting from geopolitical tensions. Lower international demand, particularly from China, is also expected to dampen growth.
<b>UK</b>	Inflation reached a multi-decade high of 9.1% in May 2022. Inflation is likely to drop to 5.8% in 2023 and likely to subdue in next coming years, the subsequent subdued trend in the coming years will positively impact the purchasing power and cost of living for households in the United Kingdom. The Bank of England is set to tighten policy further to prevent high inflation from becoming entrenched. We expect it to continue hiking rates till the policy rate reaches 2% early next year. In view of these recent developments and especially the outlook for inflation, S&P Global has lowered its outlook for the UK economy.
<b>China</b>	Momentum continues to be soft as new COVID outbreaks and the associated restrictions are hitting activity again, particularly in the services sector. Despite challenges posed by a weakening real estate sector and sentiment, the country's recovery is expected to report a strong growth through the first quarter of 2023.

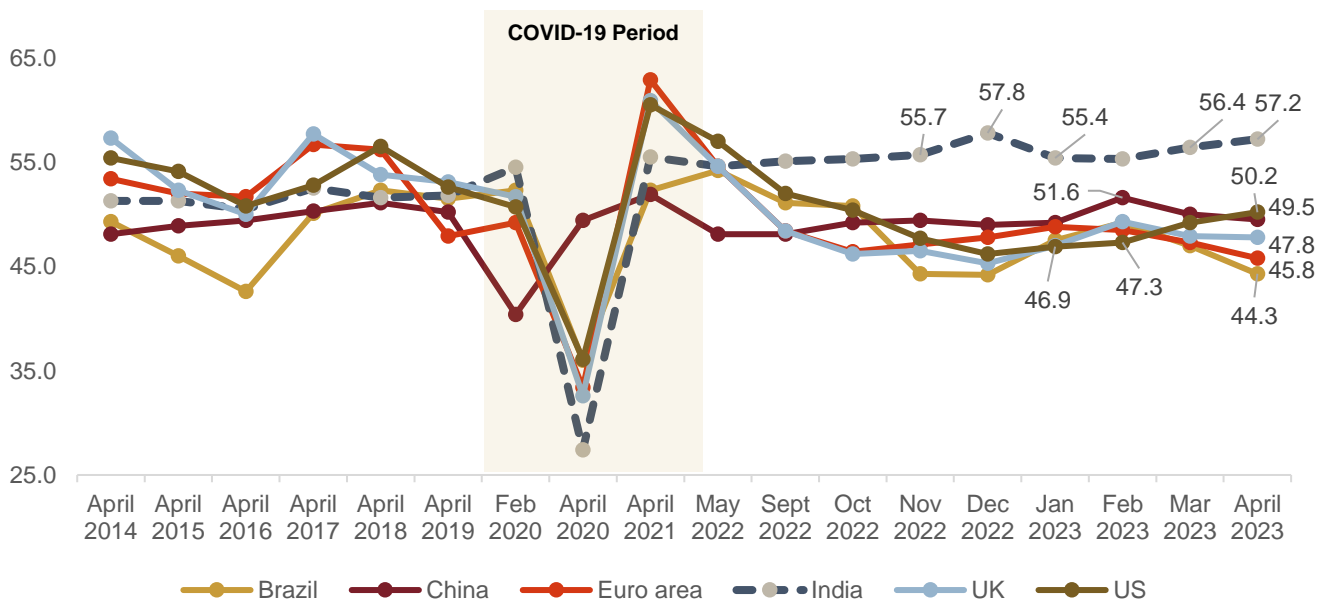
Country	Growth outlook
<b>Japan</b>	Japan's economy has picked up with the impact of COVID-19 waning, despite being affected by factors such as a rise in commodity prices. Private consumption has increased moderately, particularly for services consumption. S&P Global expect the economy to grow at 1.5% in 2022 and 1.0% in 2023
<b>India</b>	The Indian economy showed rapid growth in 2022, the second consecutive year of strong recovery following deep economic contraction in 2020 due to the COVID-19 pandemic and economic momentum is expected to remain strong in 2023.
<b>Brazil</b>	GDP projections have been lowered by S&P Global because of the impact of supply-chain disruptions on manufacturing, abrupt monetary policy tightening in the face of persistently high inflation, and a more challenging fiscal scenario. S&P global expect inflation to stay above the central bank's target - in 2023 as well, which will prompt the central bank to keep real interest rates relatively high throughout that period.
<b>Russia</b>	Supply interruptions will affect the industry, while higher inflation will weigh on household real wages and consumer spending. Due to uncertainty about the scope of possible new sanctions and trade concerns, the degree of the harm the economy will face this year remains unknown.

Source: CRISIL MI&A Consulting

### 1.3 Impact of Covid-19 on the manufacturing sector

Manufacturing Purchasing Managers' Index (PMI) numbers across economies have followed roughly similar patterns in the past few years. The index plummeted in the wake of the initial lockdowns across the world, and rebounded sharply, even above pre-pandemic levels, as restrictions were relaxed and fiscal incentives to boost the economy became common across countries. -

Figure 3: Manufacturing PMIs



Source: S&P Global

The Indian manufacturing industry had a strong start to fiscal 2023, with significant and accelerated increases in new orders and production. The S&P Global India's manufacturing PMI in April 2023 rose to 57.2 from 56.4 in the month before, reflecting a robust and quicker expansion in new orders. Production growth took another step forward in April. Companies also benefited from relatively mild price pressures, better international sales, and improving supply-chain conditions.



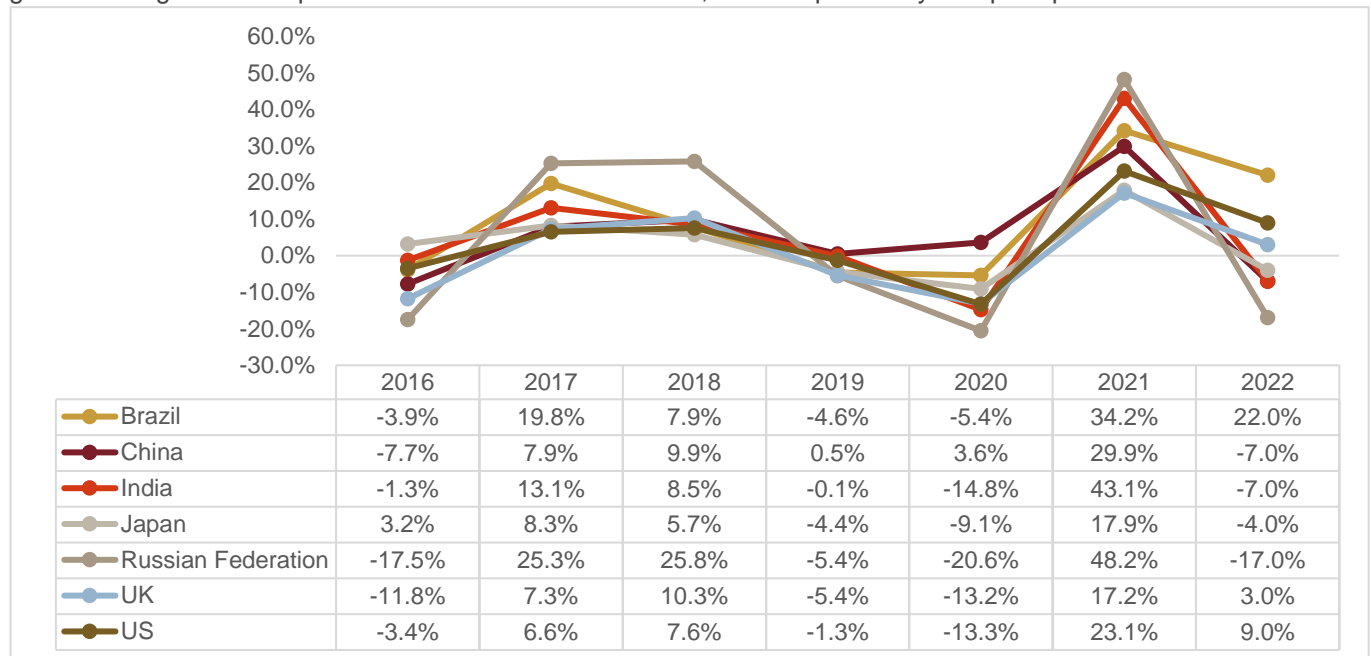
Trade growth patterns for some key economies are represented below, highlighting very similar patterns for imports and exports.

**Figure 4: Annual growth (%) in exports**

Note: Data for each calendar year

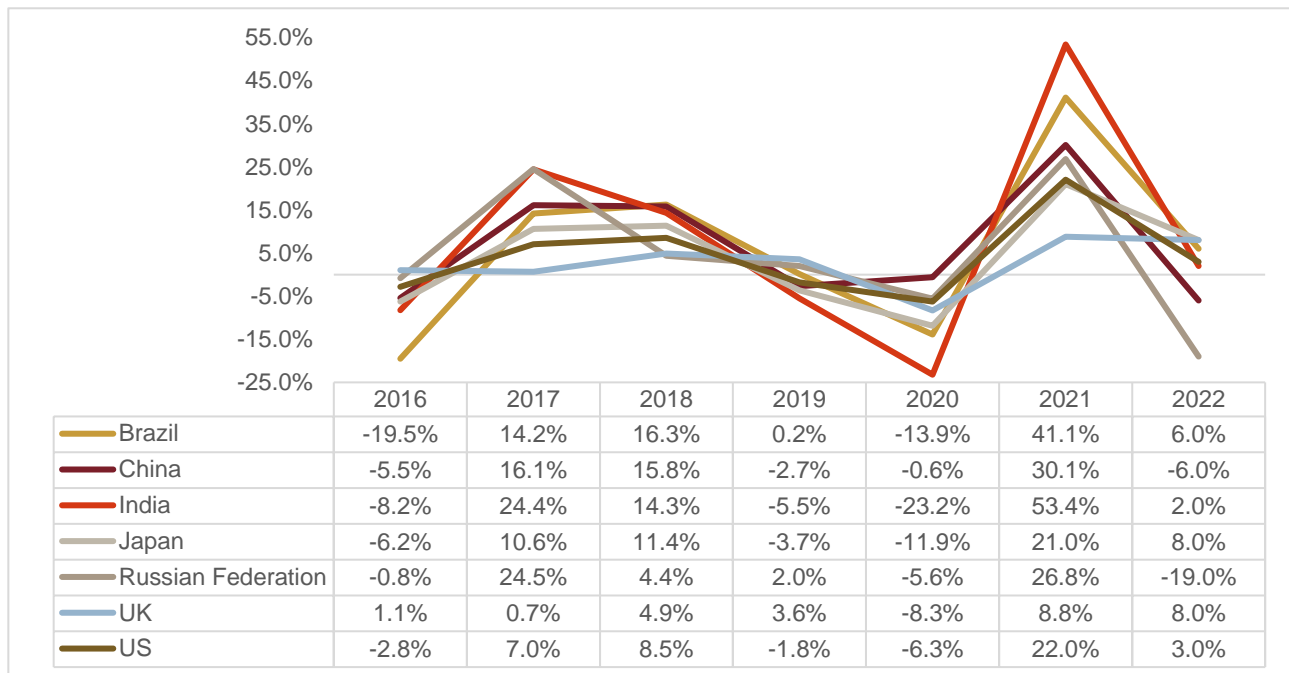
Source: UNCTAD

Despite rising geopolitical tensions, global trade has proven to be remarkably resilient during 2022. However, deteriorating economic conditions, the lifting of zero-COVID policies, and renewed concerns about inflationary pressures have resulted in a significant trade slowdown during Q4 2022. While the economic outlook has improved, global trade growth is expected to remain subdued in 2023, with the possibility of a pickup in the second half of the



year. Overall, although the outlook for global trade remains uncertain, the positive factors are expected to compensate for the negative trends

**Figure 5: Annual growth (%) in imports**



Note: Data for each calendar year

Source: UNCTAD

## 1.4 Global economy more fragile amid record inflation

The global economy is sputtering, and financial markets are flashing red due to surging inflation, a hawkish central banks' response, the impact of Russia's aggression in Ukraine, and anxious investors. Following Russia's invasion of Ukraine, global economic growth is slowing more than anticipated, and major economies are at risk of entering recession because of the energy and inflation crises. Global economic growth reported a growth of 3.4% in 2022 according to S&P Global, owing to rising stagflation risks worldwide. The global environment has become more fragile as record-high inflation continues to gain momentum and growth decelerates.

### Sharp monetary tightening

Central banks are reversing their relaxed policy stance in response to continuing cost pressures in global supply chains, amplified after Russia's military actions in Ukraine destabilized energy, food, and other key commodity markets.

### Inflation, energy security, and geopolitical uncertainty are the chief risks

Persistent supply-side price pressures in the food and energy markets may fuel broad-based inflation. Evolving repercussions of the Russia-Ukraine conflict could undermine global trade and economic growth. Other notable risks stem from governments prioritizing energy security and affordability over sustainability in the short term.

Table 2: CPI inflation projection (in annual % change)

Region	CY2022	CY2023P	CY2024P
<b>US</b>	6.3	4.7	2.8
<b>Europe</b>			
<b>Eurozone</b>	8.4	5.9	2.7
<b>Germany</b>	8.7	6.7	2.9
<b>France</b>	5.9	5.4	2.3

Italy	8.7	6.5	2.3
Spain	8.4	4.6	3.2
UK	9.1	5.8	1.4
<b>Asia-Pacific</b>			
China	2.2	2.3	2.7
<b>Middle East</b>			
Saudi Arabia	2.5	2.9	2.2
India	5.5	6.7	5.0

P: Projected

Source: S&P Global, CRISIL MI&A Consulting

Note: India number above shown in table is in FY basis.

### Major economies have unveiled economic packages to combat inflation

**US:** The US Congress passed the Inflation Reduction Act, 2022 committing \$370 billion dedicated to curbing harmful emissions and promoting green technology. The Act also aims to help individuals who need better healthcare benefits and financial stability in times of inflation, in addition to reducing the effects of inflation.

**France:** France unveiled a €20 billion anti-inflation package to assist struggling people deal with rising energy and food prices. The package includes increasing certain welfare payments and pensions by 4%, raising civil servants' salaries by 3.5%, fuel rebates by €0.12 a litre from September-October 2022 and promoting private companies to provide employees with tax-free bonuses of up to €6,000.

**Germany:** Germany unveiled a fresh €65 billion inflation relief package to help households cope with the rising prices. The package includes cheaper public transportation, one-off payment of €300 to pensioners to help them cover rising energy bills, and reduction in the tax on petrol.

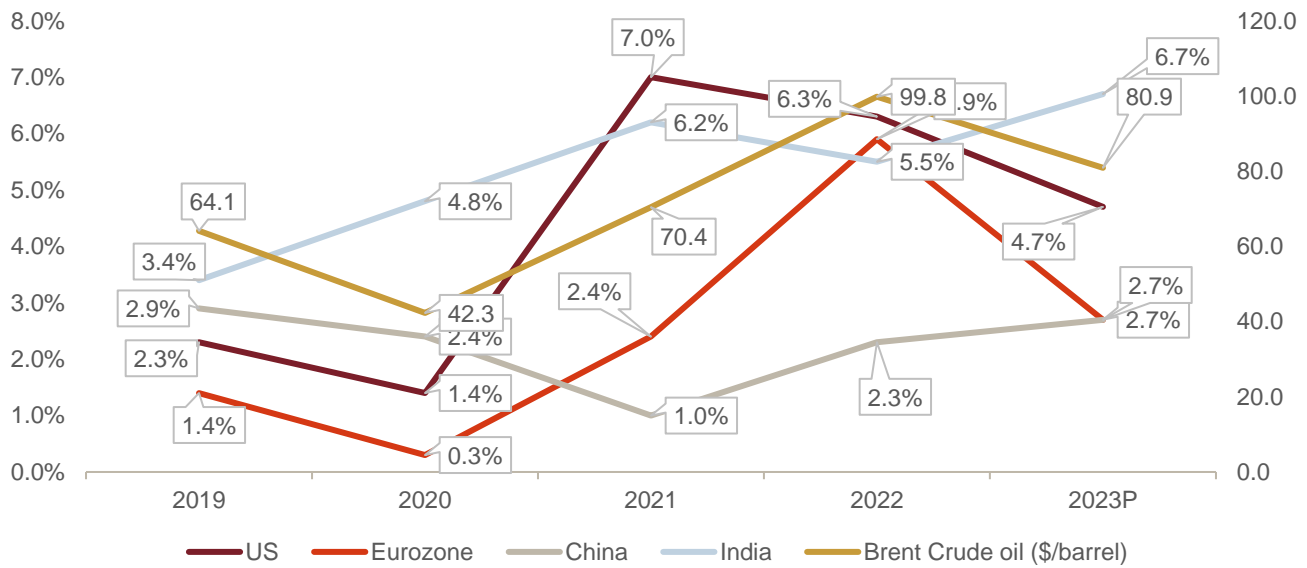
**Italy:** Italy approved a €17 billion package to tackle inflation arising from high energy cost and consumer prices. The package includes cutting electricity and gas bills for low-income families, tax cuts and re-evaluation of pensions. It also aims to support farmers against drought.

## 1.5 Rise in crude prices fuelled global inflation

In April 2023, Crude oil price increased ~7.1% m-o-m and decreased 20.5% y-o-y. Rise in price to \$84.1 per barrel in April 2023 from \$78.5 in March 2023 was primarily due to announcements of production cuts by OPEC+ leading to moderation global supply. Sharp production cuts resulted in supply pressures pushing crude oil prices northwards during the month. Whereas the aggressive interest rate hikes by major central banks sparked fears of a global economic slowdown that is expected to impact overall demand. Indeed, on the supply front, failure to achieve a ceasefire in Ukraine along with resurgence in the conflict have heightened volatility in crude prices. In fact, the ban on Russian crude oil by end-2022 is expected to create a structural shift in the oil basket globally. Any such sanctions could have a wider impact on energy supply as well as prices of alternative fuels such as natural gas and coal. This has already increased the volatility in crude prices.

Further, the OPEC's decision to reduce crude oil production, the largest production cut since the pandemic, is expected to be the most influential factor supporting the rise in prices. CRISIL MI&A Consulting expects the Brent crude oil price to be at \$80-82 per barrel in 2023, in line with the price rise globally owing to tighter oil supplies.

**Figure 6: Inflation rate in different economies vis-à-vis crude oil price**



Note: i) Forecast of Platt Analytics (Dated. Brent) for 2023: \$89.83 per barrel ii) EIA's forecast of EIA for 2023: \$97.24 per barrel iii) E: Estimated, P: Projected (data for calendar year)

Source: CRISIL MI&A Consulting

**Central banks hike interest rate in sync to tackle inflation pressures**

Since crude oil is a significant economic input, an increase in oil prices affects inflation, which measures the overall rate of price increase across the economy. Crude prices are expected to decrease from \$100 per barrel in 2022 to \$81 per barrel in 2023. Volatility in crude oil price and demand supply fundamentals is one of the main factors of inflation in US (4.7%), Eurozone (2.7%) and India (6.7%) in 2023. In a bid to contain inflation, central banks in both advanced and emerging market economies have resorted to large interest rate hikes, while governments have taken unprecedented measures to support economic recovery.

**1.6 India economic outlook is relatively positive**

The provisional estimate of GDP shows that the Indian economy has fully recovered to the pre-pandemic real GDP level of fiscal 2020. Real GDP growth was 7.0% for fiscal 2023 which reflect a faster growth momentum, which suggests higher economic demand. Future capital expenditures of the Indian government are anticipated to be supported by elements including tax buoyancy, a simplified tax system, rationalization of the tariff structure, and digitization of tax filing. Growth multipliers are expected to rise in the medium term as capital expenditures on infrastructure and asset-building projects rise. India's economy is predominantly driven by domestic demand, with consumption and investments accounting for 70% of all economic activity.

**1.6.1 Government initiatives to drive growth**

The Indian government have taken several initiatives over the years to boost the economy. Flagship programmes such as the Production-Linked Incentive (PLI) scheme along with corporate tax reduction are expected to create significant opportunities for manufacturers.

**Lower corporate tax rates**

India has reduced corporate tax rates to 22% from 30% for existing companies and to 15% from 25% for new manufacturing companies in 2019. The tax rate for new manufacturing companies is one of the lowest in the world.

The Budget of fiscal 2023 has proposed that the concessional 15% corporate tax rate would be available for one more year till March 2024 for newly incorporated manufacturing units. This corporate tax cut would improve profitability of companies and boost earnings growth. The companies could use the funds to reinvest in existing firms and provide India a more competitive advantage on the global stage.

**PLI scheme**

Following the pandemic, the government introduced the PLI scheme with incentives of Rs 1.97 lakh crore spread over five years for 14 important industries including pharma, chemicals, and food, with the goal of increasing output and exports. Between 2023 and 2027, the plan could significantly boost annual GDP growth by 0.3%. The PLI scheme aims to give incentives to companies on increased sales of products produced domestically. The PLI scheme is designed to attract foreign companies to establish operations in India and to encourage domestic companies to establish new manufacturing facilities or expand those that already exist, create more jobs, and lower India's dependency on imports.

**Measures to curb rising inflation**

The government took several measures to curb inflation in May 2022, which included lowering of excise duty on petrol, subsidies on fertilizers and gas cylinders, and reduction in import duty on critical raw materials. In the near future, the government is also planning to unveil a fiscal package to combat inflation, including another round of tax cut on fuel, lower import levies, subsidies on fertilizers, etc.

**1.6.2 Supply chain diversification**







**The global derisking strategy**










The pandemic highlighted the risk of high dominance of China in global supply chains and led to the derisking strategy of moving some of the business away from the country. More than 50% of American businesses either delayed or decreased their investments in China as per a survey conducted by the American Chamber of Commerce in April 2022. Similarly, as per a survey conducted by the European Chamber in the same month, up to 23% of European businesses were considering shifting investments out of China. This created an opportunity for Indian manufacturers, which have a cost advantage. The trend to derisk global supply chains is expected to support the growth momentum for key end-user industries in India and augurs well for the specialty oils market.

**India positioned to reap benefits**

Considering India's competitive advantage in multiple industries, favourable production characteristics and business environment, government incentives, and an overall stable economy, India is widely seen as a suitable prospect in this changed scenario. India could also stand to gain from a better legislative framework for special economic zones with duty-free imports. Global macro tailwinds in some industries such as textiles, specialty chemicals, pharmaceuticals, metals, and electronic manufacturing, along with government reforms, are projected to set India on a sustainable economic path.

**Table 3: Competitiveness of India vs China**

Parameter	US/Europe	China	India
Labour cost			
Environmental compliance			

Parameter	US/Europe	China	India
Plant capex			
Government policy support			
Conduciveness of recent geopolitical landscape			

Note: Colour of the pie indicates relative advantage of a particular country/region vis-à-vis others in relation to a particular parameter. A fully coloured pie indicates maximum advantage compared with the other two regions.

Source: CRISIL MI&A Consulting

## 2 Indian macroeconomic overview

### 2.1 India to remain the fastest growing economy despite GDP growth slowing to 6% in fiscal 2024

India is expected to grow at a faster clip than its peers, driven by stronger domestic demand. Investment prospects are optimistic given the government’s capex push, progress of the Production-Linked Incentive (PLI) scheme, healthier corporate balance sheets, and a well-capitalized banking sector with low non-performing assets (NPAs). For fiscal 2023, real GDP growth is expected to be 7.0% in FY23, according to the second estimates released by the National Statistical Office (NSO).

#### Growth estimates revised by NSO for pandemic years (fiscal 2022, 2021 and 2020) retained for fiscal 2023

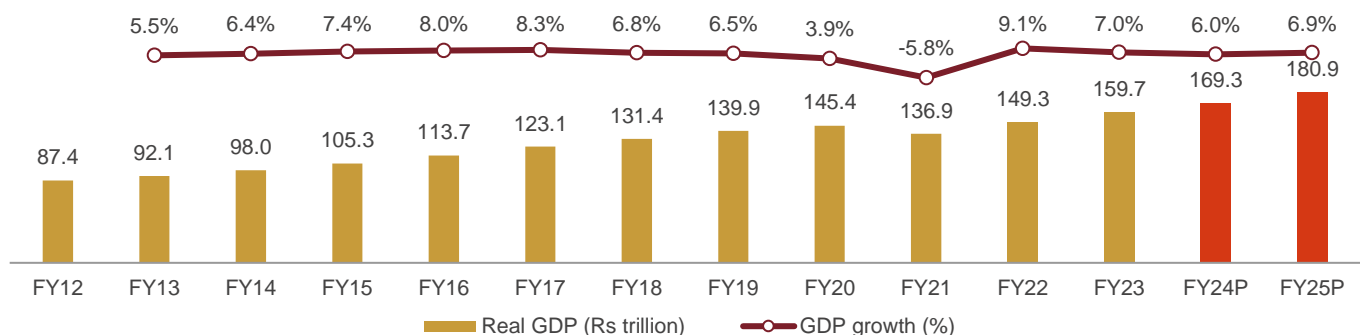
- Alongside quarterly estimates, the National Statistics Office (NSO) released revised estimates until last fiscal and second advance estimates for this fiscal.
- The second advance estimates maintained the GDP growth estimate for this fiscal at 7.0%, same as the previous estimate.
- Growth estimates were revised up for the previous 3 years — 9.1% (compared with 8.7% previously) for fiscal 2022, -5.8% (-6.6) for fiscal 2021, and 3.9% (3.7%) for fiscal 2020. This suggests that the impact of Covid-19 waves (in fiscals 2021 and 2022) was not as severe as thought previously.

#### GDP growth slows on domestic and external factors

India’s real gross domestic product (GDP) grew 4.4% on-year in the third quarter in fiscal 2023, slower than 6.3% previous quarter and 5.2% in the same quarter last fiscal. Real GDP growth was dragged down by slowing growth in key economies - which impacted India’s exports – as well as cooling domestic demand. The advanced economies will inevitably face slower growth in CY2023 as their interest rates are already at decadal highs. They account for 45% of India’s exports, which will bear the brunt of weaker demand. Demand is expected to slow further as transmission of RBIs rate hikes continues and raises borrowing costs. Besides the global slowdown, a forecast of El Nino, which disturbs Indian monsoons, is another risk to monitor — it could hit rural incomes.

The above-mentioned factors are expected to slow India’s GDP growth to 6.0% next fiscal from 7.0% this fiscal. However, CRISIL MI&A Consulting still expects India to remain the fastest-growing economy compared to other major economies.

Figure 7: India GDP outlook



F: Forecasted

Source: CRISIL MI&A Consulting, Central Statistics Office (CSO), S&P Global Economics and Oxford Economics



Factors that will shape growth this fiscal and next

- The global slowdown will impact domestic industrial activity through the exports channel
- The one-time lift to contact-based services from domestic demand will abate next fiscal, but government capex will stay supportive
- Corporate revenue will continue to grow in double digits, helped by buoyant domestic demand

## 2.2 Macroeconomic indicators snapshot

Table 4: Key projections

	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24P
Real GDP growth (%)	8.3	6.8	6.5	3.9	-5.8	9.1	7.0	6.0
CPI <sup>1</sup> (% , average)	4.5	3.6	3.4	4.8	6.2	5.5	6.7	5.0
CAD <sup>2</sup> /GDP (%)	-0.7	-1.8	-2.1	-0.9	0.9	1.2	2.5	2.0
FAD <sup>3</sup> /GDP (%)	3.5	3.5	3.4	4.6	9.2	6.9	6.4	5.9
Exchange rate (Rs/\$, March-end)	65.9	65	69.5	74.4	72.8	76.2	82.3	83.0
10-year G-sec yield (% , March-end)	6.8	7.6	7.5	6.2	6.2	6.8	7.4	7.0

E: Estimated; P: Projected

1) Consumer price index; 2) current account deficit; 3) fiscal deficit

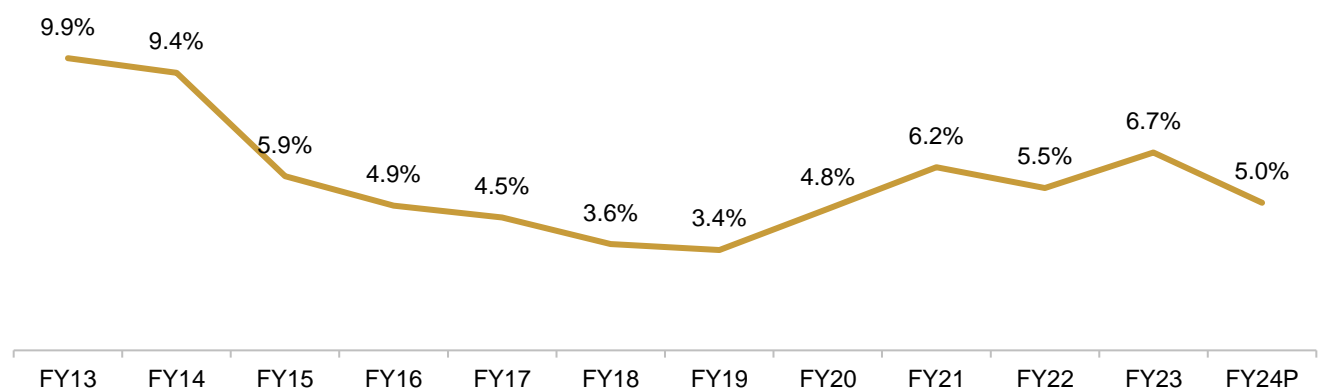
Source: CSO, RBI, CRISIL MI&A Consulting

## 2.3 Inflation forecast to soften in FY24, but headwinds building up

Headline Consumer Price Index (CPI) inflation increase to 6.7% on-year in fiscal 2023 from 5.5% in the previous fiscal. CRISIL MI&A Consulting expect CPI inflation to average 5% this fiscal (FY24) from 6.7% in the last fiscal.

Food inflation is expected to moderate in FY24, on account of high base effect and expectation of good rabi output. However, El Nino conditions pose an upside risk for food inflation. Fuel inflation, which shot up due to Russia-Ukraine conflict is expected to cool significantly in FY24 partly due to high base effect. Core inflation is expected to moderate but remain relatively higher than food and fuel inflation. This is because of pass through pressures on producers and resilient demand for services.

Figure 8: CPI inflation trend (% , y-o-y)



P: Projected

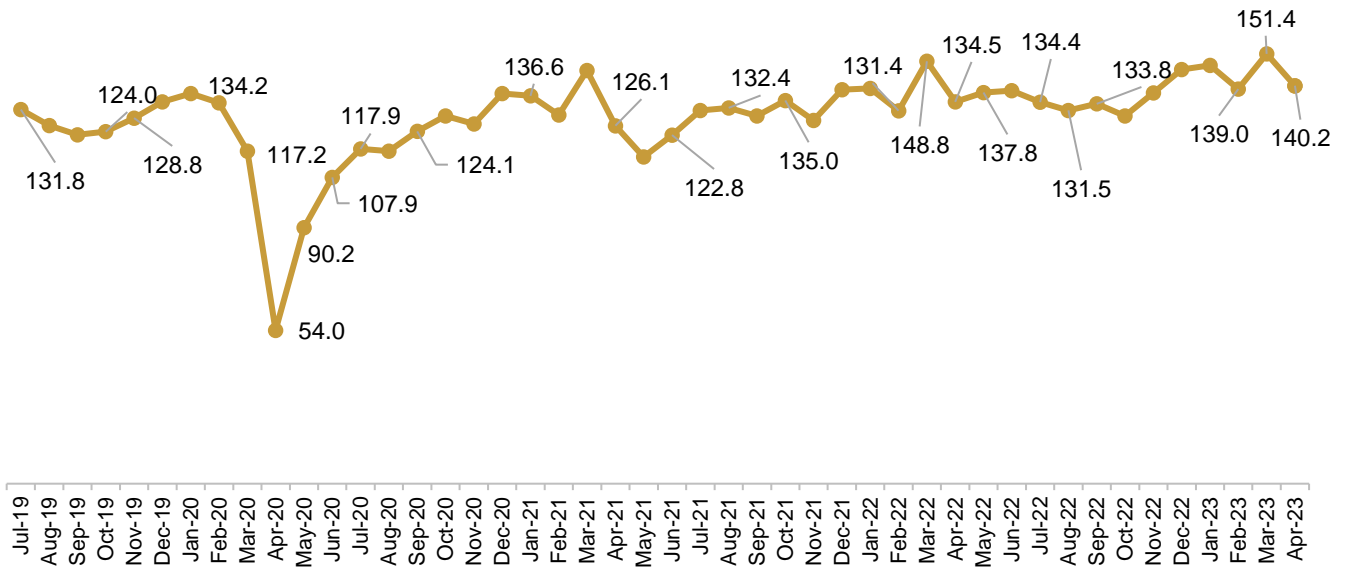
Source: CSO, CRISIL MI&A Consulting



## 2.4 Index of Industrial Production (IIP)

IIP grew 1.7% in the month of March 2023 compared to March 2022. Overall, in fiscal 2023, IIP grew 5.2%, compared with 11.4% in fiscal 2022. Exports weighed heavy since the second half of last fiscal, while domestic demand was relatively supportive. Exports may become a bigger drag on industrial growth in fiscal 2024, given a sharper slowdown in major advanced economies.

Figure 9: Value of IIP



Source: Ministry of Statistics & Programme Implementation

### 3 Overview of the global specialty oil industry

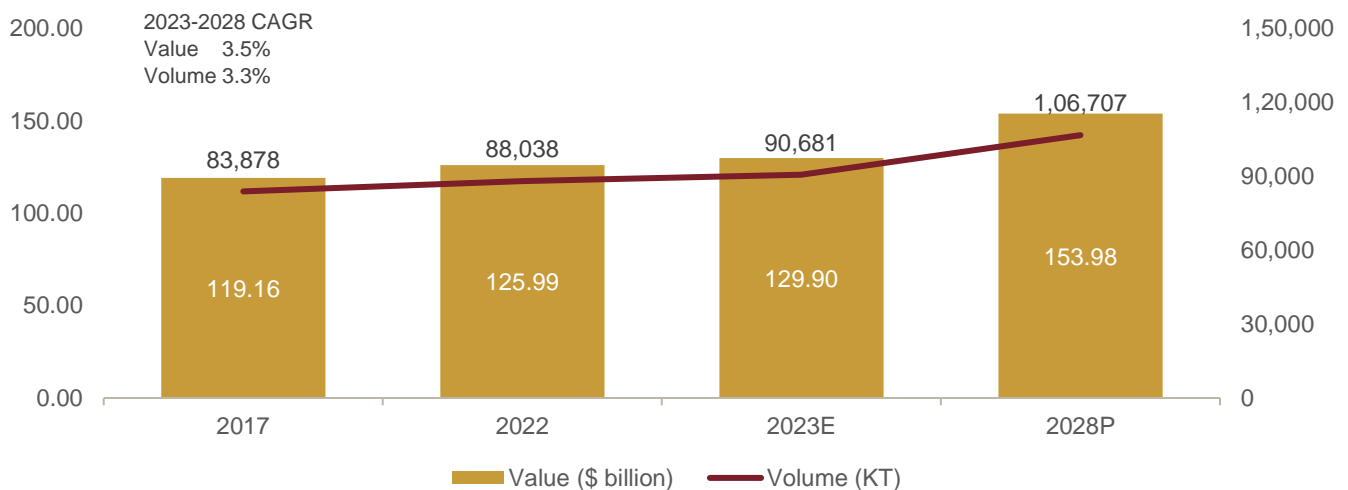
#### 3.1 The global specialty oil industry

The global specialty oil market is characterized by a large product mix and a wide variety of applications across multiple end-user industries. Overall market growth is driven by increasing demand across multiple products that in turn is gaining from the positive outlook of end-user industries. For instance, white oil market demand benefits from growth in pharmaceuticals & personal care products, while transformer oil demand benefits from the transmission & distribution industry. Further, industrial oil demand is significantly driven by the rising focus on the domestic manufacturing sector. Also, automotive oil benefits from rising transport needs, improving income levels and improving road infrastructure. Overall, these industries mainly drive the sectoral demand of the specialty oil sector.

#### Global specialty oil to reach \$154 billion by 2028

The global specialty oil market value, estimated at \$129.90 billion in 2023, is expected to grow to \$154.0 billion by 2028, at a CAGR of 3.5%. The specialty oil market is estimated to create an absolute incremental opportunity of ~\$24 billion over the next five years driven by increasing consumption of specialty oils in different end-use industries such as consumer, pharmaceuticals, automotive, manufacturing, power generation, and others.

**Figure 10: The global specialty oil industry size**



*E: estimated; P: projected | Data for each calendar year*

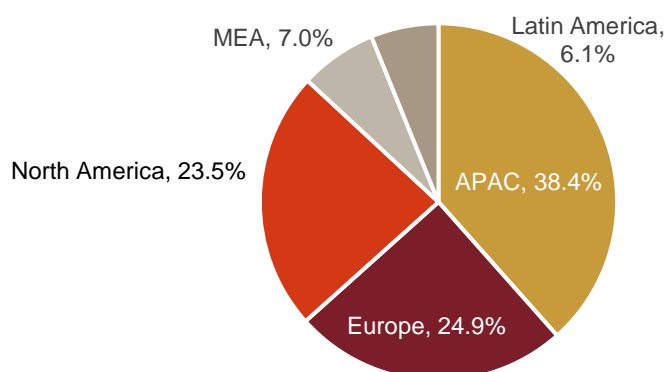
*Source: CRISIL MI&A Consulting*

The global specialty oil market size, pegged at 90,681 kilo tonne (KT) at the end of 2023, is anticipated to grow at a five-year CAGR of 3.3% to 106,707 KT by 2028.

#### 3.2 The global specialty oil industry by region

Asia-Pacific (APAC) & Europe are dominating the specialty oil market owing to the presence of end use industries such as pharmaceuticals, consumer, and different consumer bases. North America & the Middle East and Africa (MEA) are also expected to witness increased demand for these oils from their end-use industries in the forecast period.

**Figure 11: The global specialty oil market share of key regions by value in 2022**



Source: CRISIL MI&A Consulting

**APAC -dominated specialty oil industry with 38.4% market share by value in 2022**

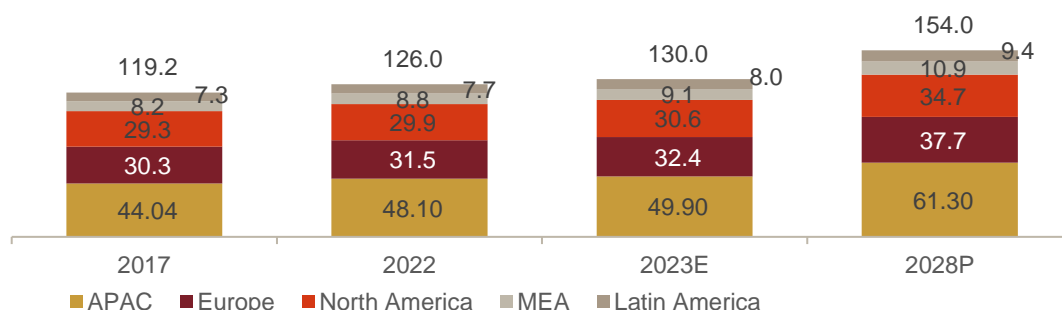
The region is the largest and the fastest growing market for specialty chemicals as it is home to two large consumers (China and India) which remain the centre of market activities. The region holds a 38.4% share by value and a 42.7% share by volume globally. APAC is expected to maintain its leading position with a rising population and increasing prosperity in the region. The specialty oil market in APAC is expected to grow from \$49.9 billion in 2023 to \$61.3 billion in 2028 at a CAGR of 4.2%.

Pharma and consumer represent emerging growth segments. Increasing insurance penetration, rising medical spending, and growing export opportunities bode well for pharma segment growth. Further, increasing awareness about personal looks, and availability of different cosmetic products is a key trend that favours the consumer segment. Additionally, the market is also driven by the size and growth of automobile and power sectors in the region

**Figure 12: The global specialty oil market by region (\$ billion)**

**2023-2028 CAGR**

APAC	4.2%
Europe	3.1%
North America	2.6%
MEA	3.7%
Latin America	3.4%



E: estimated; P: projected / Data for each calendar year

Source: CRISIL MI&A Consulting

**Europe is the second-largest contributor to industry value with a 25% market share**

The region holds a 25% share by value and a 21.7% share by volume globally. The specialty oil market in Europe is expected to grow from \$32.4 billion in 2023 to \$37.7 billion in 2028 at a CAGR of 3.1%. New growth stems from the pharma and consumer segments which currently have a smaller share in the overall demand pie. The automotive sector accounts for most of the demand as it benefits from high vehicular density and a preference for

driving, resulting in demand for premium lubricants. Also, Europe’s energy need is anticipated to rise led by Germany and Russia. This would require construction of new power plants and hence open attractive growth prospects for the transformer oil market.

**North America remains the third-largest region with a 23.7% market share with demand led by the automotive industry**

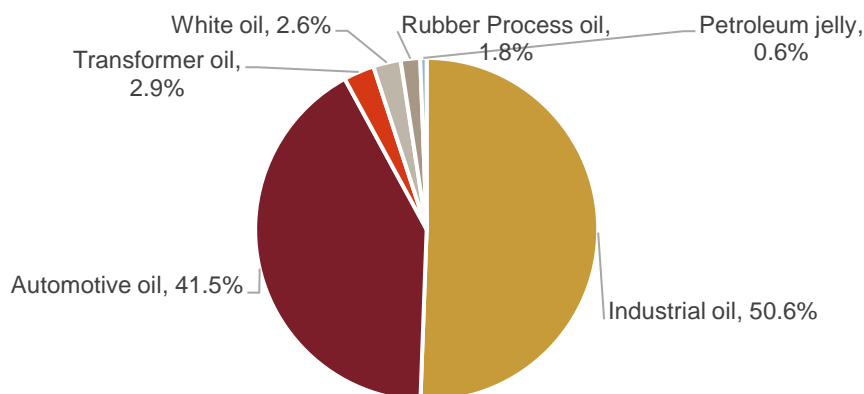
The specialty oil market in North America is expected to grow from \$30.6 billion in 2023 to \$34.7 billion in 2028 at a CAGR of 2.6%. Over the past few years, the key trends have been favourable for the region as the US pharmaceutical sector has seen consistent expansion on the back of increasing awareness about health and hygiene. Further, the region has been facing rising disease occurrence. Consequently, medical spending is on the rise, supporting future market growth. Further, there has been a significant increase in industrialization and manufacturing (particularly, electrical equipment and devices in countries such as the US. All these factors together support the demand outlook for specialty oil products.

**Middle East & Africa and Latin America to exhibit gradual expansion led by Saudi Arabia**

The Middle East, Africa and Latin America together hold a 13% market share by value of the specialty sector globally. The automotive sector accounts for ~47% to overall demand of the specialty oil market. Saudi Arabia is the key market in the region. The pharmaceutical and consumer segments are the key growth areas given the rising spend on medical infrastructure. Further, the consumer segment benefits from rising health awareness and expansion of product offerings.

**3.3 The global specialty oil market by product type**

**Figure 13: The global specialty oil market share of products by value in 2022**



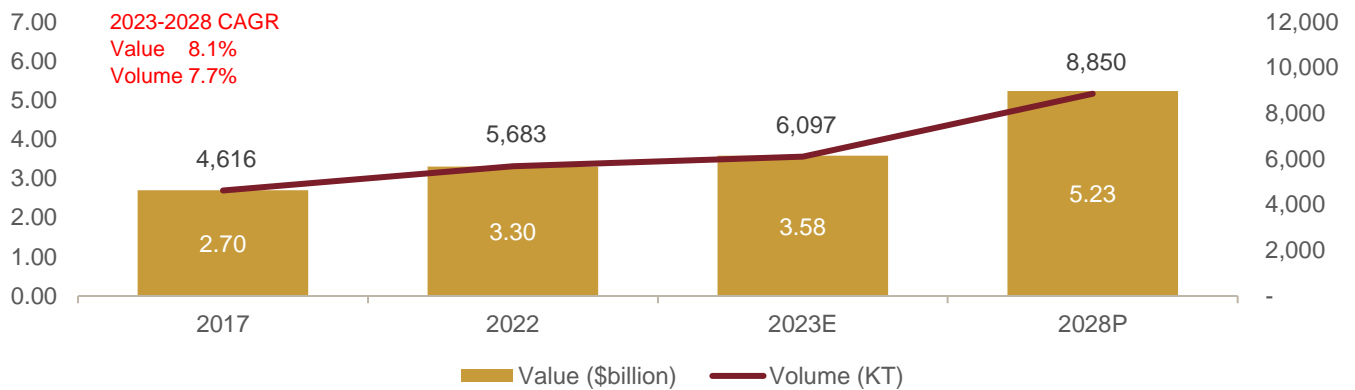
Source: CRISIL MI&A Consulting

**White oil market is the fastest growing product type in the specialty oil market globally**

Mineral oils that have been refined to make them pure, stable, colourless, odourless, and non-toxic are known as white oils and their demand is mainly driven by increasing usage of personal care products (such as creams, lotions, and laxatives) and pharmaceuticals. Both these industries are on an uptrend due to improving lifestyles, an increasing focus on self-care, and rising awareness about personal hygiene and health.

Additionally, the demand for white oil is also driven by food processing sector growth. All these factors together would propel white oil market growth in the forecast period. The market value of white oil is anticipated to grow from \$3.58 billion in 2023 to \$5.23 billion by 2028, at a CAGR of 8.1%. Further, the market size in terms of volume is expected to grow from 6,097 KT in 2023 to 8,850 KT in 2028, at a CAGR of 7.7%.

**Figure 14: Global white oil market growth trajectory**



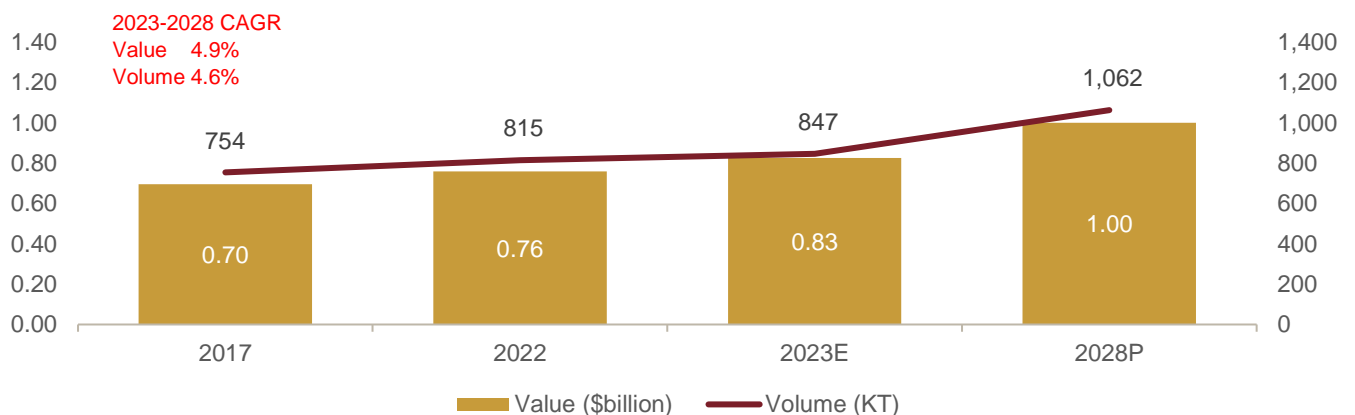
E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Petroleum jelly demand to cross \$1 billion in the next five years**

Petroleum jelly is available in pharmaceutical grade, industrial grade, and cosmetic grade. Prominent end users of petroleum jelly are food, pharmaceuticals, leather and shipping industries. The petroleum jelly market, estimated at \$0.83 billion in 2023, will grow to \$1.0 billion by 2028 at a CAGR of 4.9%. Additionally, the market volume is projected to increase from 847 KT in 2023 to 1,062 KT by 2028 at a CAGR of 4.6%.

**Figure 15: Global petroleum jelly market growth trajectory**



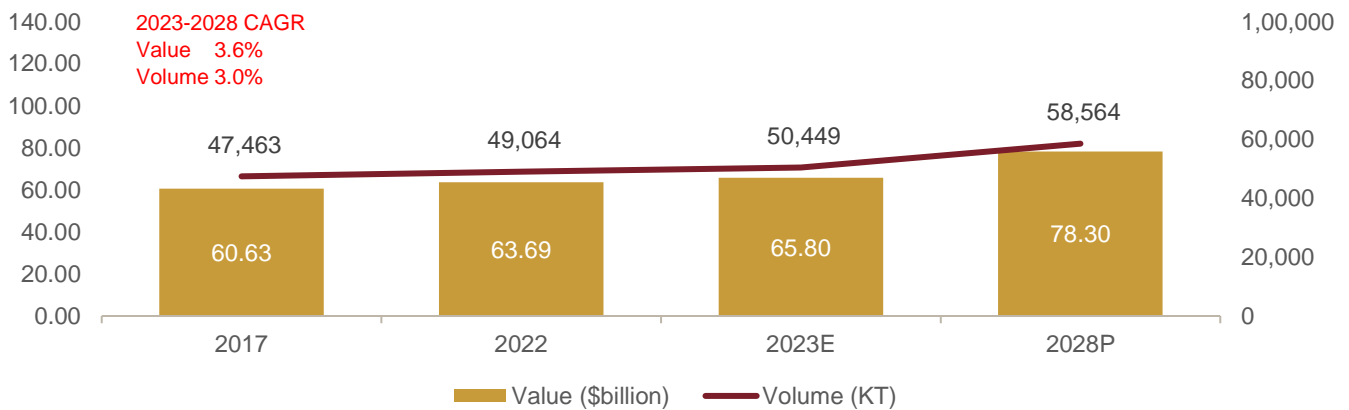
E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**The industrial oil market is projected to increase by \$12.5 billion over 2023 to 2028**

The industrial oil market is projected to be driven by rising industrial output in China, India, and Japan. Additionally, an increase in the production of food and drinks is leading to an increase in the use of industrial oils such as greases and hydraulic fluids. Consequently, industrial oil market volume is estimated to increase from 50,449 KT in 2023 to 58,564 KT in 2028. Also, the market value is forecast to grow to \$78.30 billion in 2028 from \$65.80 billion in 2023.

**Figure 16: Global industrial oil market growth trajectory**



E: estimated; P: projected | Data for each calendar year

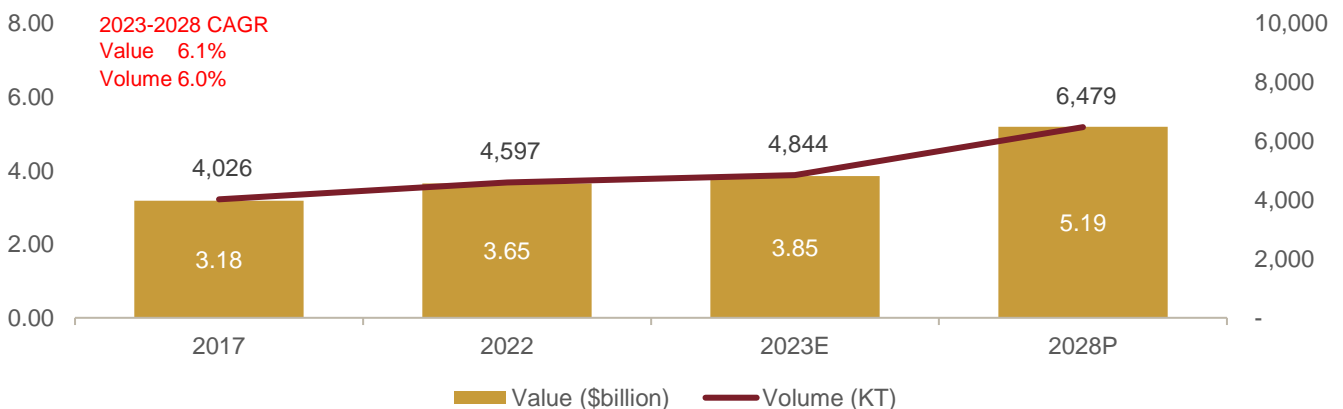
Source: CRISIL MI&A Consulting

**Transformer oil market to benefit from the rising trend of electrification globally**

In a transformer, transformer oil performs two crucial tasks: (1) it prevents arcing; and (2) dissipates the heat produced by the device. Transformer oil improves electrical insulation, is more stable at high temperatures, and inhibits oxidation. Mineral oil and synthetic oil are most widely utilised in transformer applications. Rising industrialisation and urbanisation are key growth drivers for electricity demand. Additionally, there has been an increasing focus on providing uniform access to electricity as part of the drive to boost basic amenities. Consequently, there are growing efforts globally to modernise and create/expand power grids, which augurs well for transformer oil demand.

Hence, the global transformer oil market is anticipated to grow at a CAGR of 6.1% from \$3.85 billion in 2023 to \$5.19 billion by 2028. In terms of volume, the market is projected to rise from 4,844 KT in 2023 to 6,479 KT in 2028

**Figure 17: Global transformer oil market growth trajectory**



E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

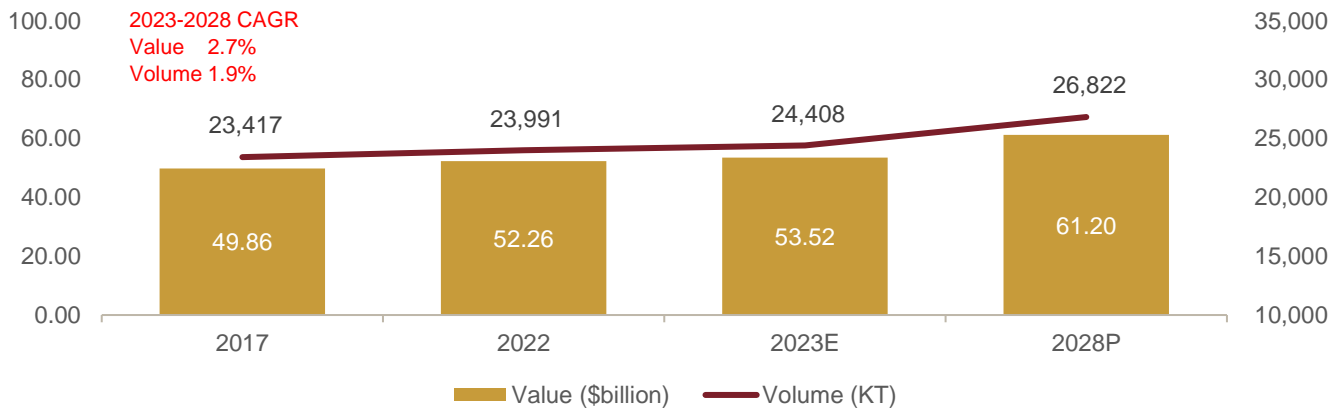
**Automotive oil market uptick driven by the growing auto industry and rising disposable income**

Automotive lubricants are chemicals used to lessen surface friction and stem the deterioration of car parts. Engine oils, transmission fluids, grease oils, process oils, and general industrial oils are often used as car lubricants. The use of automotive lubricants is also boosted by the huge potential of emerging economies. Additionally, the

segment demand benefits from the rising demand of environment-friendly lubricants. Automotive lubricating oils are predominantly marketed in collaboration with automotive manufacturers and petrol stations.

The global automotive lubricant market, valued at \$53.52 billion in 2023, is expected to grow to \$61.20 billion by 2028, at a CAGR of 2.7%. Additionally, the market size by volume, estimated at 24,408 KT in 2023, is projected to grow to 26,822 KT by 2028.

**Figure 18: Global automotive oil market growth trajectory**



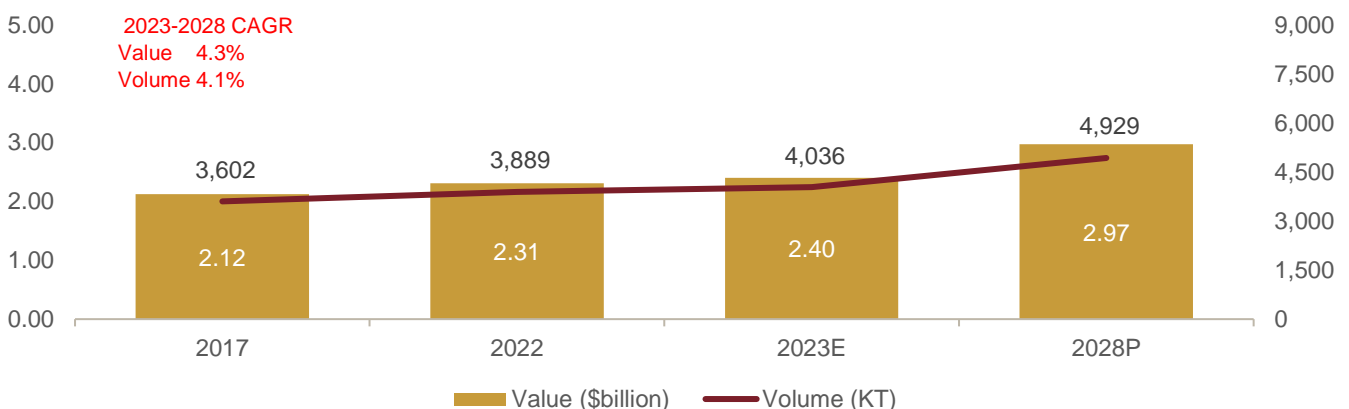
E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**The rubber process oil market set to increase from \$2.40 billion in 2023 to \$2.97 billion by 2028**

Rubber process oil is used in the production of goods ranging from small rubber bands to enormous aircraft tyres. This oil enhances the physical traits and qualities of the goods. Rubber process oils work well in a variety of applications. The rising number of automobiles globally has contributed to the demand for tyres and hence led to rising consumption of rubber process oil.

**Figure 19: Global rubber process oil market growth trajectory**



E: estimated; P: projected | Data for each calendar year

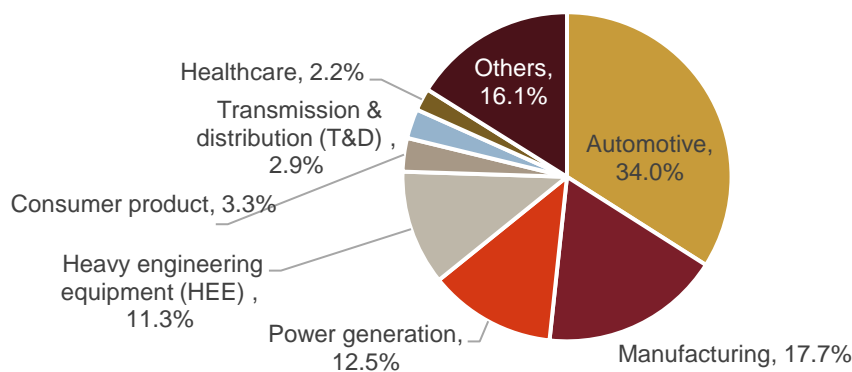
Source: CRISIL MI&A Consulting

### 3.4 Global specialty oil market by end-use segment

**With rise in purchasing power, demand for enhanced products and increasing image and health consciousness driving demand for consumer product segment**

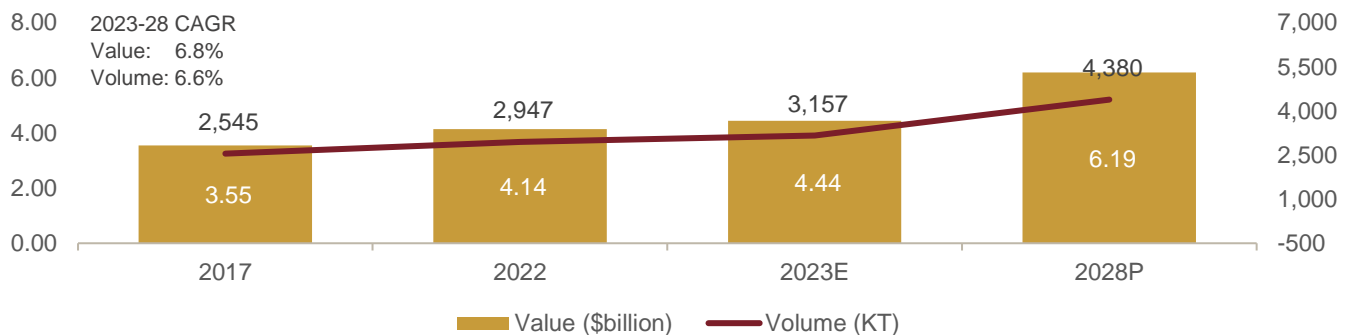
The consumer product segment encompass beauty & personal care (BPC) and consumer food. The consumer product segment is expected to represent a total incremental opportunity of \$1.75 billion over the next five years. The segment is anticipated to reach \$6.19 billion by 2028 from \$4.43 billion in 2023, at a CAGR of 6.9%. There has been a rise in demand for personal care goods, driven by people's increased awareness of their appearance and growing disposable incomes. While creating various personal care products, white oil is used as a basic component and as an emollient. It is widely used in the production of a variety of personal care goods, including cosmetics, skincare products, moisturisers, baby items, body lotions, hair oils, shampoos, scents, and creams that are water-resistant. The fibrous and oily structure of petroleum jelly, along with mineral oils, aids in nourishing the skin. Rising spending on healthy and nutritious diet have fueled the demand of food & beverages globally.

**Figure 20: Global specialty oil market share of end-use segments by value (2022)**



Note: Consumer segment includes food & beverages (0.4%) and beauty & personal care (2.9%)  
Source: CRISIL MI&A Consulting

**Figure 21: Consumer product segment in the global specialty oil market**



Note: Consumer product segment includes food & beverages and beauty & personal care  
E: Estimated; P: Projected | Data for each calendar year  
Source: CRISIL MI&A Consulting

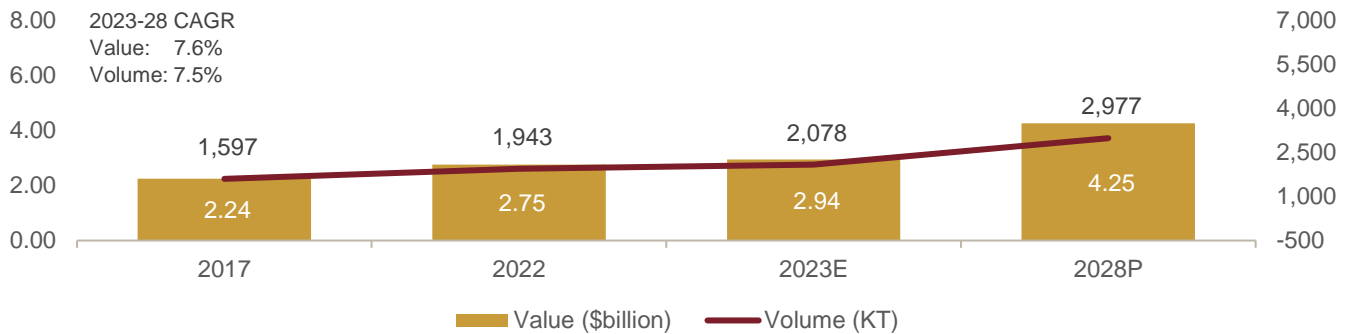
#### Healthcare segment to see highest growth on the back of rising awareness about health and hygiene

The healthcare segment is expected to represent a total incremental opportunity of \$1.3 billion over the next five years. The segment is anticipated to reach \$4.2 billion by the end of 2028. The emergence of the covid-19



pandemic has focused global attention on the healthcare industry's complex issues ranging from workforce shortages to vaccine equity, government spending, and digital health. Despite its small market size, the healthcare is one of the most profitable industry in the world. In the coming years, increased interest in the sector since the pandemic began, higher quality general healthcare, and rising life expectancy are likely to boost spending and healthcare industry growth.

**Figure 22: Healthcare segment in the global specialty oil market**



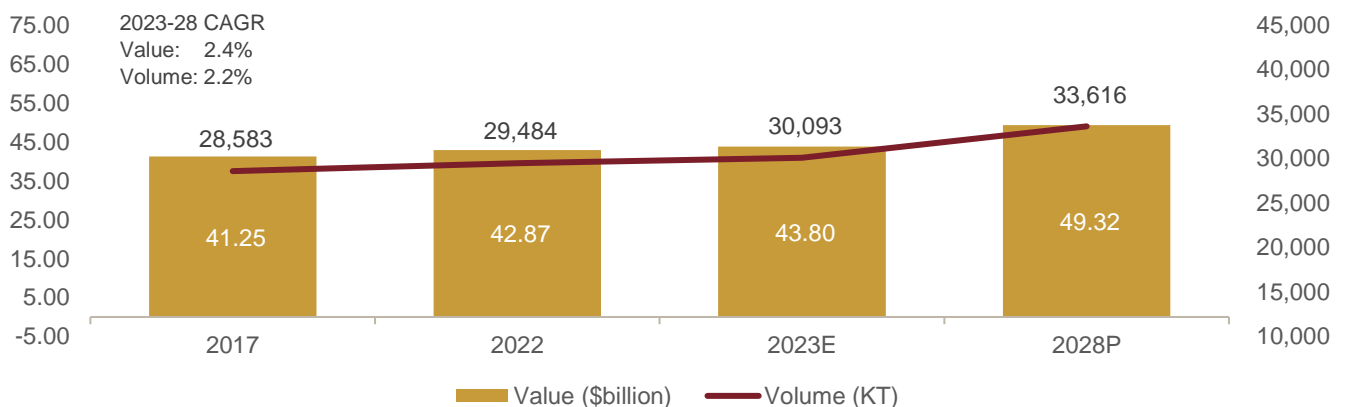
E: Estimated; P: Projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Growth in automobile market to drive automotive specialty oil market growth**

The automotive segment is expected to represent a total incremental opportunity of \$5.5 billion during 2023-28. The segment is anticipated to reach \$49.3 billion by 2028 from \$43.8 billion in 2023, at a CAGR of 2.4%. The growth would be primarily supported by rising commercial vehicle sales.

**Figure 23: Automotive segment in the global specialty oil market**



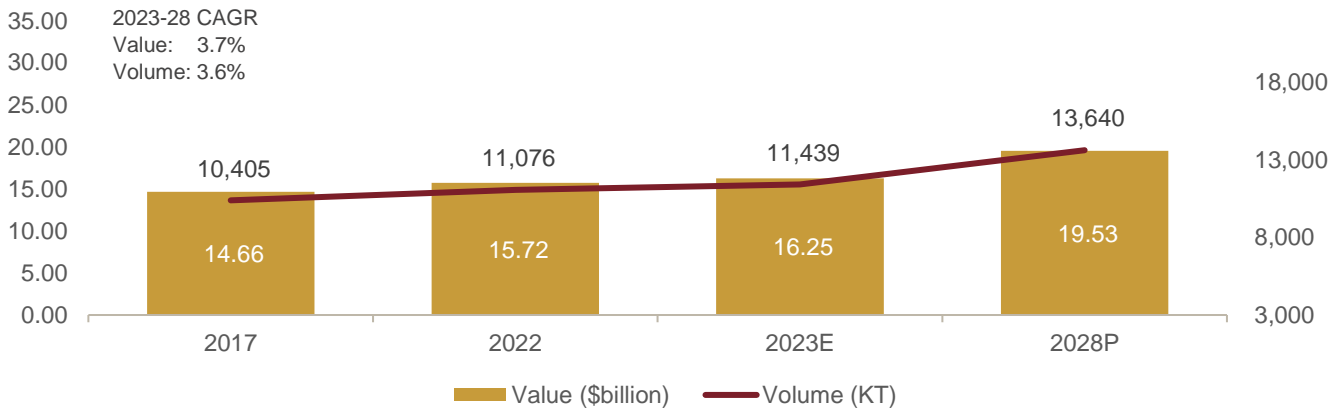
E: Estimated; P: Projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Rapid industrialisation and electricity demand to boost demand from power generation segment**

The power generation segment is expected to represent a total incremental opportunity of \$3.28 billion over the next five years. The segment is estimated at \$16.3 billion in 2023 and is projected to reach \$19.5 billion by 2028, exhibiting a CAGR of 3.7%. Increasing demand for electricity and reliable supply has led to the increase in installation of standalone power production systems to counter the impact of fluctuating loads and meet increasing power demand in industrial applications. This trend bodes well for transformer oil demand from the power generation segment.

**Figure 24: Power generation segment in the global specialty oil market**



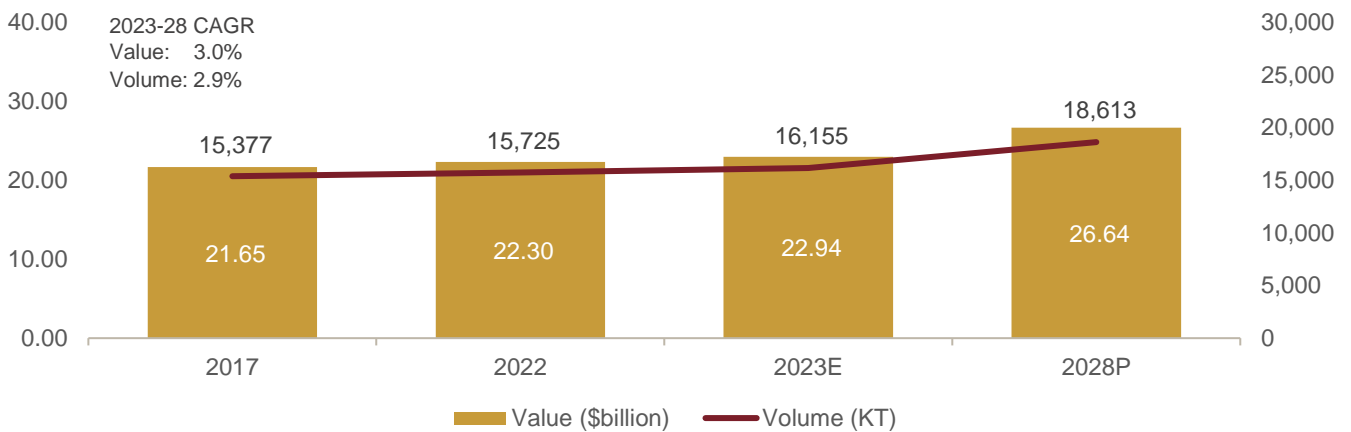
E: Estimated; P: Projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Demand from manufacturing to reach \$26.64 billion by 2028**

The manufacturing segment is expected to represent a total incremental opportunity of \$3.70 billion over the next five years. The segment is anticipated to grow from \$22.94 billion in 2023 to \$26.64 billion by 2028. The use of lubricants in the manufacturing sector increases the life of machines and bearings.

**Figure 25: Manufacturing segment in the global specialty oil market**



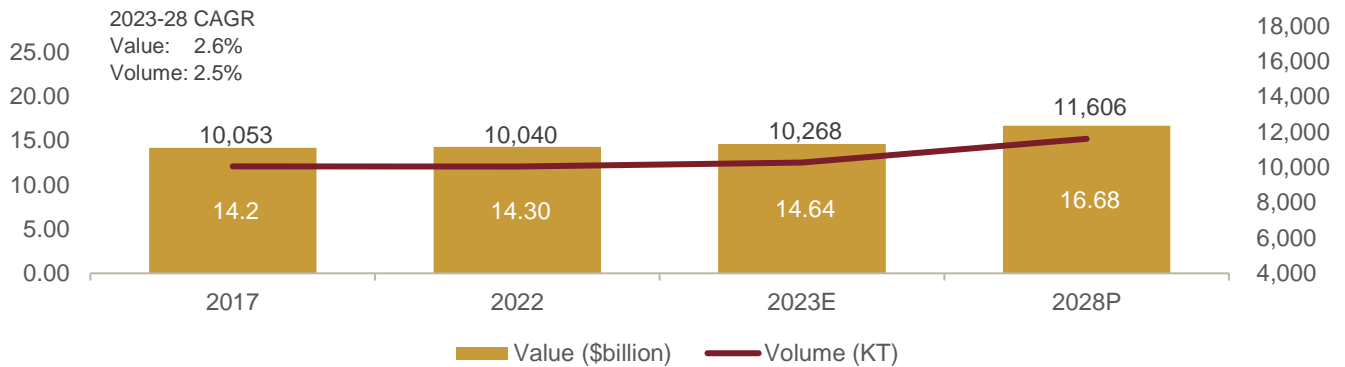
E: Estimated; P: Projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Use of heavy equipment globally has expanded due to the growing construction and mining industries**

The heavy engineering equipment segment is expected to represent a total incremental opportunity of \$2.0 billion over the next five years. The segment is anticipated to reach \$16.68 billion by 2028 from \$14.64 billion in 2023, at a CAGR of 2.6%. The need for industrial lubricants is rising as a result of increasing industrialisation and increased use of machinery.

**Figure 26: Heavy engineering equipment segment in the global specialty oil market**



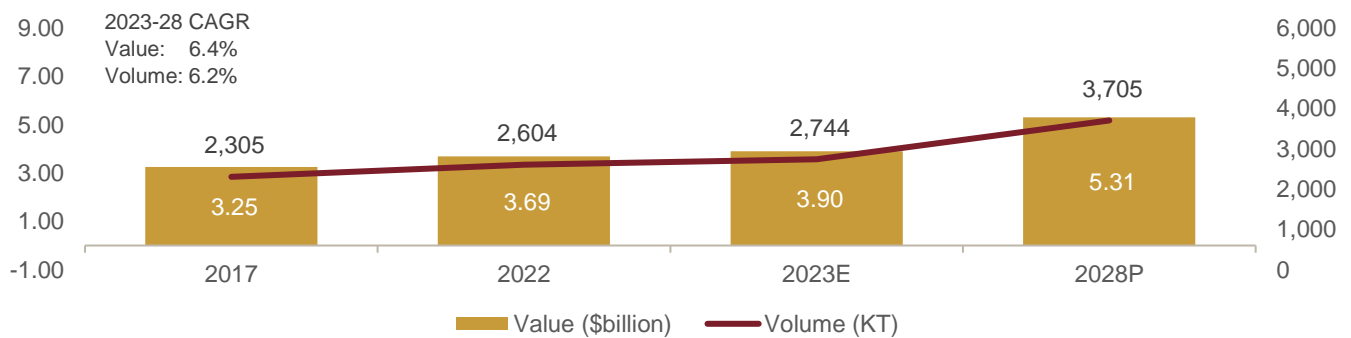
E: Estimated; P: Projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Rising power demand owing to growing population, industrialisation and urbanisation boosts T&D segment**

The transmission & distribution segment is expected to represent a total incremental opportunity of \$1.41 billion over the next five years. The segment is anticipated to reach \$5.31 billion by 2028 from \$3.90 billion in 2023, at a CAGR of 6.4%. By end-user, the transformer oil market is expected to be dominated by the T&D segment over the forecast period. It is anticipated that the T&D line extension will increase demand for electrical equipment and thus raise the need for transformer oil.

**Figure 27: Transmission & distribution segment in the global specialty oil market**



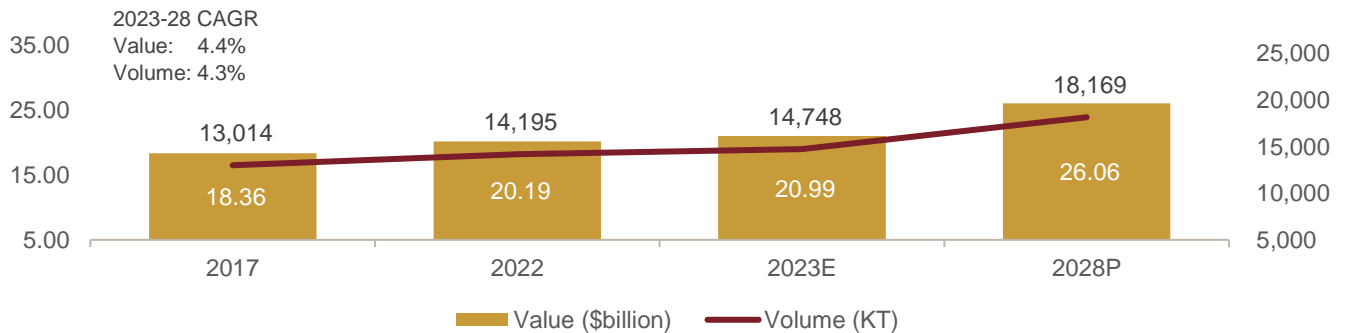
E: Estimated; P: Projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Others segment is expected to grow ~\$5.07 billion during the projection period**

This segment includes polymers, textile, adhesives, rubber processing and lubricants that use specialty oils to perform different functions at different stages. The segment is anticipated to expand at a CAGR of 4.4% to \$26.06 billion by 2028 from \$20.99 billion in 2023.

**Figure 28: Others segment in the global specialty oil market**



E: Estimated; P: Projected | Data for each calendar year

Source: CRISIL MI&A Consulting

### 3.5 Major global players

#### Market structure analysis

##### Global white oil market value share analysis by key companies, 2022

The global white oil market is oligopolistic with a few players highly active in the market. The top 10 players account for 40-45% of the global white oil market. Key market players are Calumet Specialty Products Partners, HollyFrontier, ExxonMobil, Shell, Chevron Corporation and Total Energies. Major Indian players in the global white oil market are Gandhar Oil, Raj Petro, Apar Industries and Savita Oil, where Gandhar is amongst top 2 white oil players and the only Indian player to rank among the top 5 players globally by revenue. The market also has several small and midsize players that give competition to Tier 1 players. Key market participants are strategically focusing on acquisitions and collaborations to widen their market presence and attain higher market shares. Small and midsize manufacturers are focusing on providing cost-effective and value-for-money products to improve their market penetration. With growing consumer awareness, demand for high purity ingredients in consumer products is rising at rapid rate and smaller players find it difficult to provide such quality.

##### Global automotive oil market value share analysis by key companies, 2022

The global automotive oil market is consolidated, with a few large players holding a majority of the share. Key players are Shell, Valvoline, BP, ExxonMobil, and Total Energies. The top 10 players account for 65-70% of the market. Driven by stringent vehicle emission norms, demand for high-purity automotive oils is rising rapidly. This hinders the entry of small-scale manufacturers into the market. Key manufacturers are all set to relish this opportunity. Manufacturers are expanding their geographic presence, product portfolio and production capacity to cater to the growing demand.

##### Global transformer oil market value share analysis by key companies, 2022

The global transformer oil market is consolidated, with a few players highly active in the market. Major players are ExxonMobil, Nynas AB, Apar Industries, Phillips 66 and Chevron Corporation. The top 10 players account for 40-45% of the global transformer oil market.

##### Global industrial oil market value share analysis by key companies, 2022

The global industrial oil market is consolidated, with a few companies highly active in the market. ExxonMobil, Shell, Phillips 66, TotalEnergies and Chevron Corporation are the major players. The top 10 players account for 42-46% of the global industrial oil market.

### **3.6 Global market trends**

#### **Market gradually moving towards consolidation**

Leading multinational corporations predominate the market. A barrier to entrance is a high capital requirement. The market, which is tough for small firms to enter, is headed toward consolidation as existing players grow larger.

#### **Volume-driven business**

Suppliers need to achieve scale to remain competitive as volume drives margin. Manufacturers from end-use industries such as pharma, personal care, food processing, automotive and power depend on procurement of large volumes.

#### **Focus on adherence to quality norms**

The global lubricant market is undergoing a structural change due to increasing regulations on emissions and quality standards in several segments, including marine, industrial, and automotive. The white oil market, especially for pharma, food, and consumer applications, is highly regulated, and suppliers are required to comply with the globally accepted standards. As a result, manufacturers are switching from Group I lubricants, the least expensive but lowest-quality base oil grade, to Group II and Group III grades.

#### **Growing demand for index-based pricing**

Growing number of customers are demanding index-based pricing. Leading companies are increasingly adopting index-linked pricing and therefore can offer their customers competitive pricing contracts. Several smaller companies do not have adequate transparency in their pricing policies, and the changes are either arbitrary or purely based on historical price trend.

#### **Partnerships, mergers and acquisitions, and new activities related to product launches**

To remain competitive and fortify their positions on the global stage, key firms are concentrating more on partnerships, mergers, organic growth, and other operations. Key market participants are also introducing new products to compete with their counterparts.

### **3.7 Global market growth drivers**

#### **Robust growth in end-user industries and increase in R&D to drive market growth**

Over the past few years, there has been immense focus on R&D, innovation, and product development across all major end-user industries, particularly those linked to lifestyle products. Additionally, businesses are concentrating on creating items with greater efficacy due to the modern R&D infrastructure. The expansion of government funding and R&D infrastructure opens doors for creation of innovative, cost-effective white oil-based goods.

There is rising demand for premium products based on user awareness, social status and lifestyle upgrade, particularly personal care, and beauty products. This is expected to propel demand for white oils, which are used in hair care products, lotions, creams, etc.

#### **Growing consumerism**

The global middle class is expected to reach 5.5 billion by 2030. While developed countries are mostly replacement economies, developing countries have both a growing consuming population and a growing economy. Middle class spending is expected to reach \$64 trillion by 2030, driven by growing consuming classes in emerging economies.

#### **Focus on health and hygiene consciousness**

The Covid-19 epidemic has accelerated the worldwide trend of rising hygiene and health consciousness. To prevent the spread of illnesses in professional settings, there is a higher understanding of the value of preventative measures, proper hand hygiene, cleaning procedures, and hygiene solutions. The demand for white oil is

anticipated to rise as a result. The decline in global poverty, rise in disposable incomes and living standards, and improvement in healthcare access have a beneficial effect on demand.

#### **Uninterrupted power supply vital for end-use industries**

The power generation sector is poised to grow on the back of rising demand for reliable power supply. In industries that rely heavily on power, even a brief power outage can cause equipment damage as well as decreased productivity, resulting in customer and revenue loss. Power outages can be caused by inefficient heavy machinery operation as well as unanticipated equipment downtime. As a result, reducing unscheduled downtime is a top concern in the power generation business, to maximize production and profitability. Proper lubrication ensures the operational effectiveness of numerous machines in the power generation business, resulting in highly reliable equipment. Since industrial oils are required to keep operations running smoothly, the demand for these oils will rise in tandem with the expansion of the power generation industry, which is predicted to multiply in the years to come.

#### **Expansion of electrical grids to drive power sector and thereby transformer oil demand**

With increasing economic development, access to electricity and development of related infra are among the topmost priorities of nations. In line with this, there is a strong trend of expansion and development of electrical grids in developing nations, and upgradation of these grids in developed economies. Apart from social development, the above trend is also fuelled by increasing urbanization and growing penetration of electric appliances in the market with rising disposable incomes.

#### **Growing automotive industry to boost demand for automotive oils**

The global automotive industry has shown moderate growth. During the projected period, rising automobile production and sales are anticipated to be some of the key drivers boosting the market for automotive oil. Emerging economies are expected to have higher levels of automotive production than industrialized nations, because of rising urbanization and steady economic conditions.

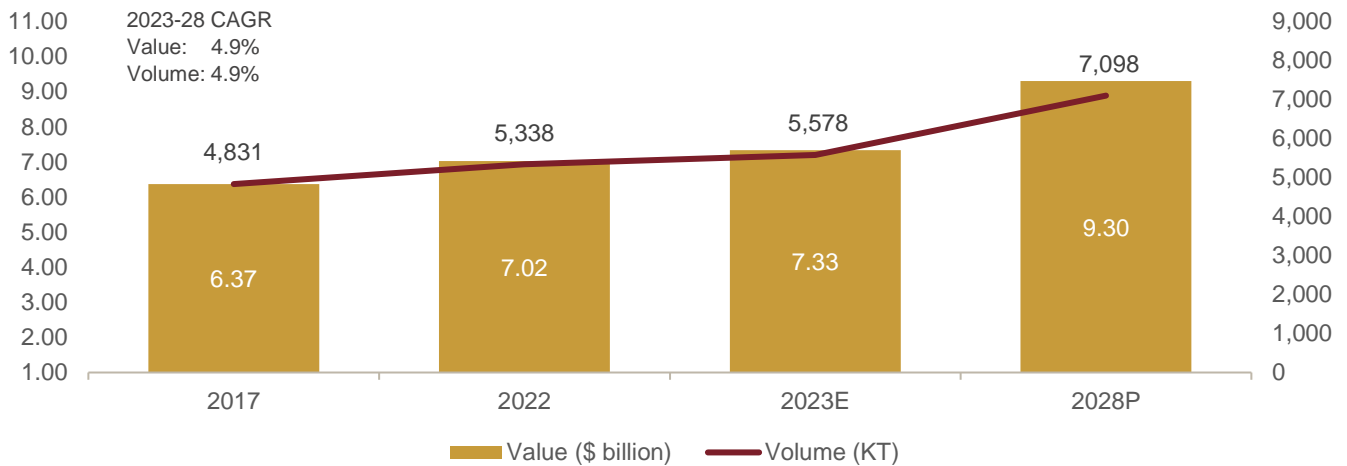
#### **Increasing demand and usage of heavy equipment in construction, mining, and agriculture industries to aid market**

Increased private sector investment, real estate sector growth, residential and commercial infrastructure development in emerging countries is driving the heavy engineering equipment market. Furthermore, the expansion of government infrastructure development projects and public-private partnerships for public infrastructure system construction in countries such as the United States, India, and China has aided market growth.

## 4 Overview of the Indian specialty oil industry

The Indian specialty oil market is estimated to be \$7.33 billion in 2023 and reach \$9.30 billion by 2028, at a CAGR of 4.9%. In terms of volume, the market is estimated to be 5,578 kilo tonne (KT) in 2023 and reach 7,098 KT by 2028, at a CAGR of 4.9%.

**Figure 29: Indian specialty oil industry's trajectory**



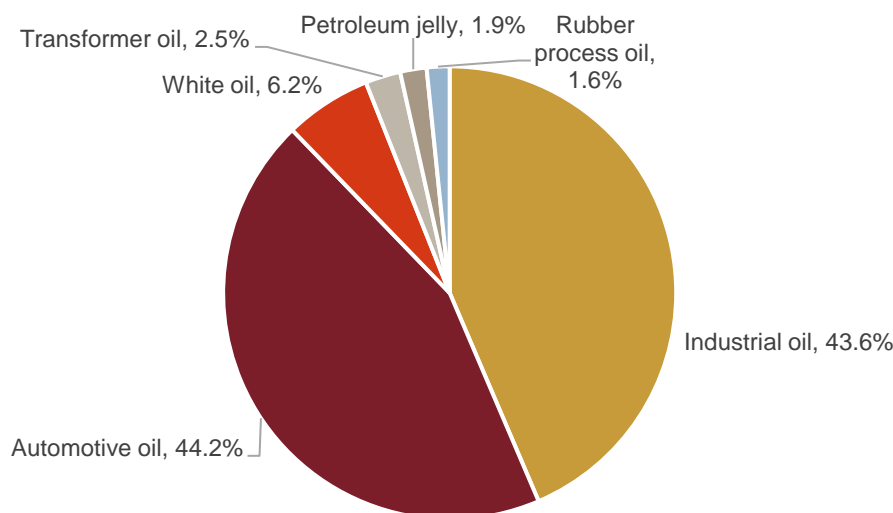
E: Estimated; P: Projected | Data for each calendar year

Source: CRISIL MI&A Consulting

### 4.1 Indian specialty oil industry by product type

White oil is expected to be the fastest-growing segment over the forecast period, given the favourable outlook for end-user industries amid rising focus on product safety and awareness about health and hygiene. In terms of market share, automotive oil holds the largest share, although the market is expected to provide relatively slow and sustained growth rate. Industrial oil represents the second-largest product category by market size.

**Figure 30: Indian specialty oil market share by product type (2022)**



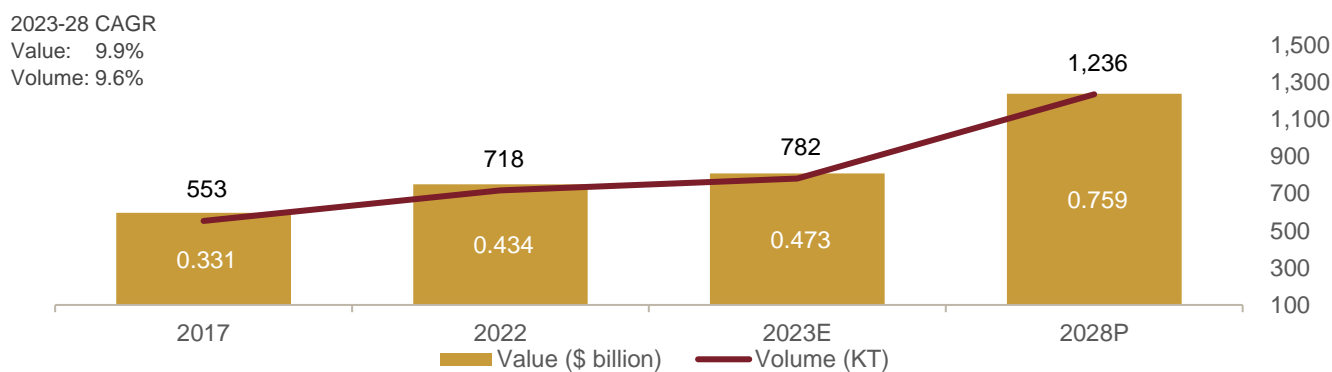
Source: CRISIL MI&A Consulting



**Pharmaceuticals and consumer to drive the Indian white oil market**

White oil, the fastest-growing segment of the Indian specialty oil market, is estimated to be worth \$0.473 billion in 2023 and reach \$0.759 billion by 2028, at a CAGR of 9.9%. In terms of volume, it is expected to reach 1,236 KT by 2028 from 782 KT in 2023, at a CAGR of 9.6%. One of the categories in this area that is growing particularly quickly is personal care and cosmetics. The market is anticipated to be driven by improving standard of living and rising demand for cosmetics. The other growing category is pharmaceuticals. Government initiatives such as the PLI scheme, expertise in low-cost generic patented drugs, quality service at a low cost compared with the US, Europe, etc., and strong domestic demand are the key drivers of the Indian pharmaceutical market.

**Figure 31: Indian white oil market**



E: Estimated; P: Projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Indian manufacturers export white oil across APAC, Europe, and MEA**

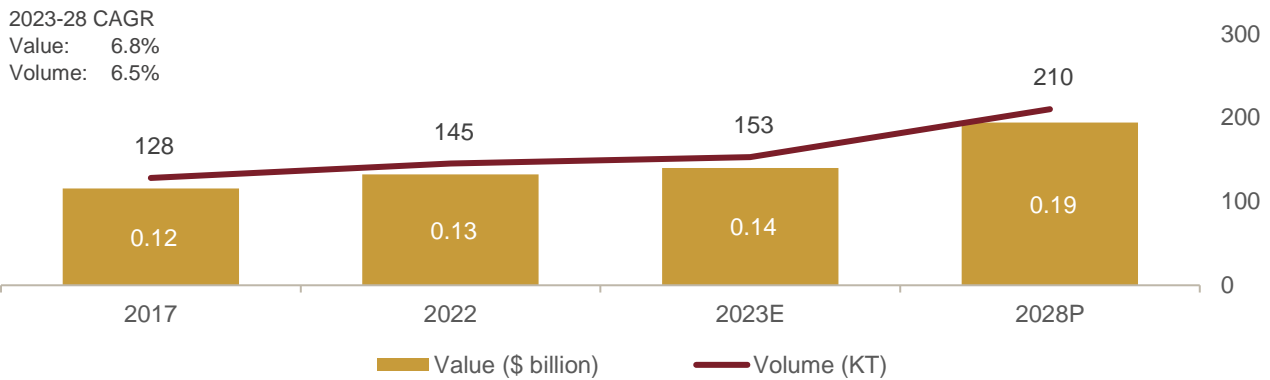
Key Indian white oil manufacturers, such as Gandhar Oil, Raj Petro, Apar Industries and Savita Oil, export their products to customers located across APAC, Europe, MEA and America. Key importing countries in APAC include Indonesia, Vietnam, Bangladesh, Sri Lanka, and Australia. In Europe, companies are exporting to countries such as Italy, Spain, Georgia, and Poland while in MEA (Middle East & Africa), Tanzania, Kenya, Nigeria, South Africa, Ghana are the top export destinations. Canada and US are the major importing countries in America. African and Asian countries will continue to rely on imports because of the growing end-use applications and the limited or non-existence of domestic manufacturers of white oils.

**Use of petroleum jelly is anticipated to drive rising demand because of changing living standards and growing economy**

The petroleum jelly market is expected to expand at a CAGR of 6.8% to \$0.19 billion by 2028 from \$0.14 billion in 2023. The expansion of end-use sectors such as pharmaceuticals, cosmetics and personal care, and food is likely to have a positive impact on petroleum jelly sales revenue in the future.



**Figure 32: Indian petroleum jelly market**



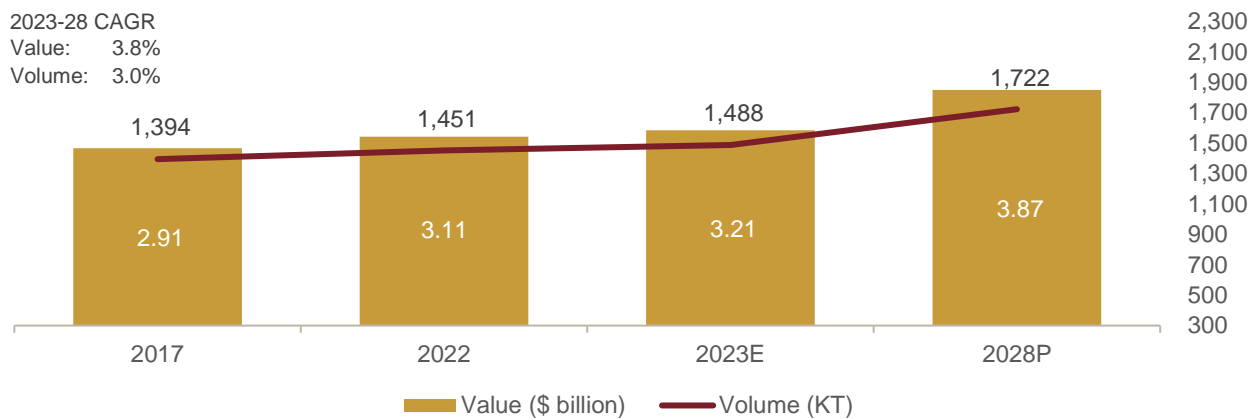
E: Estimated; P: Projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Rebound in vehicle sales to support automotive oil market growth**

The Indian automotive oil market is estimated to be worth \$3.21 billion in 2023 and reach \$3.87 billion by 2028, at a CAGR of 3.8%. Further, in terms of volume, the market is estimated to be 1,488 KT in 2023 and reach 1,772 KT by 2028, at a CAGR of 3.0%. High performance requirements in the vehicles and extended lifetime and protection of the automotive systems are leading the automotive oil market demand.

**Figure 33: Indian automotive oil market**



E: Estimated; P: Projected | Data for each calendar year

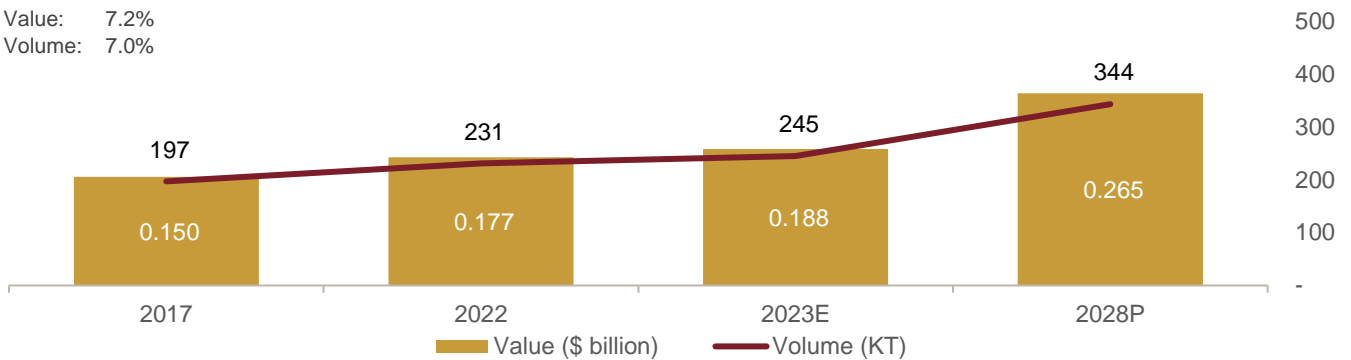
Source: CRISIL MI&A Consulting

**New transformers and switchgears because of the grid network and T&D system growth will drive demand for transformer oil**

The Indian transformer oil market is estimated to be worth \$0.19 billion in 2023 and reach \$0.27 billion by 2028, at a CAGR of 7.2%. This growth will be driven by the expansion of the T&D system and grid network to meet the expected rise in power consumption brought on by rapid industrialization and urbanization.

**Figure 34: Indian transformer oil market**

2023-28 CAGR  
Value: 7.2%  
Volume: 7.0%



E: Estimated; P: Projected | Data for each calendar year

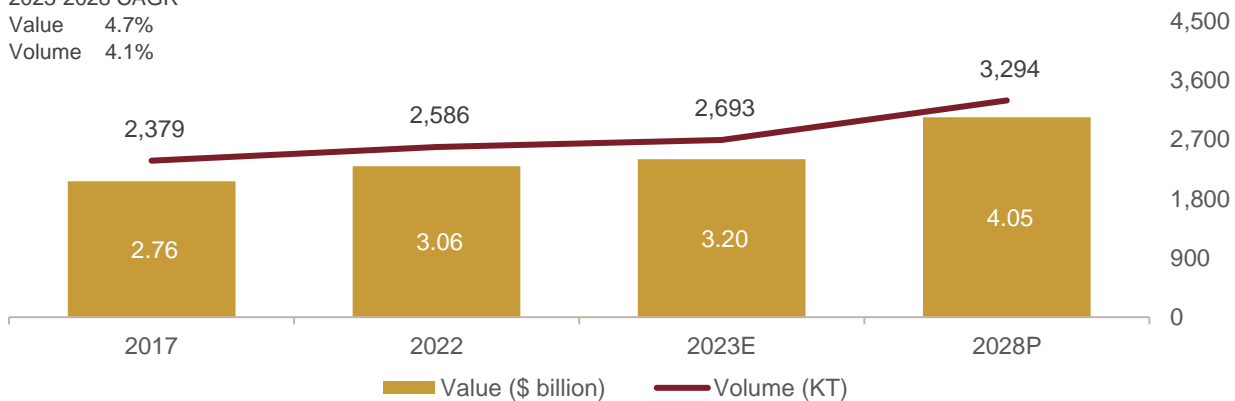
Source: CRISIL MI&A Consulting

**Industrial oil market in India is expected to grow by \$842 million in the next 5 years**

Industrial oil market in India is estimated to be worth \$3.20 billion by 2023-end and is expected to further grow to \$4.05 billion in 2028 at 4.7% CAGR. On volumetric basis, it is expected to expand to 3,269 KT by 2028 from 2,693 KT in 2023, increasing at 4.1% CAGR. The substantial use of industrial oil in the power generation industry to increase power plant productivity boosted its demand. Further, increase in demand of heavy engineering equipment in construction, mining, and agriculture industries will boost the market of Industrial oil in India.

**Figure 35: Indian industrial oil market**

2023-2028 CAGR  
Value 4.7%  
Volume 4.1%



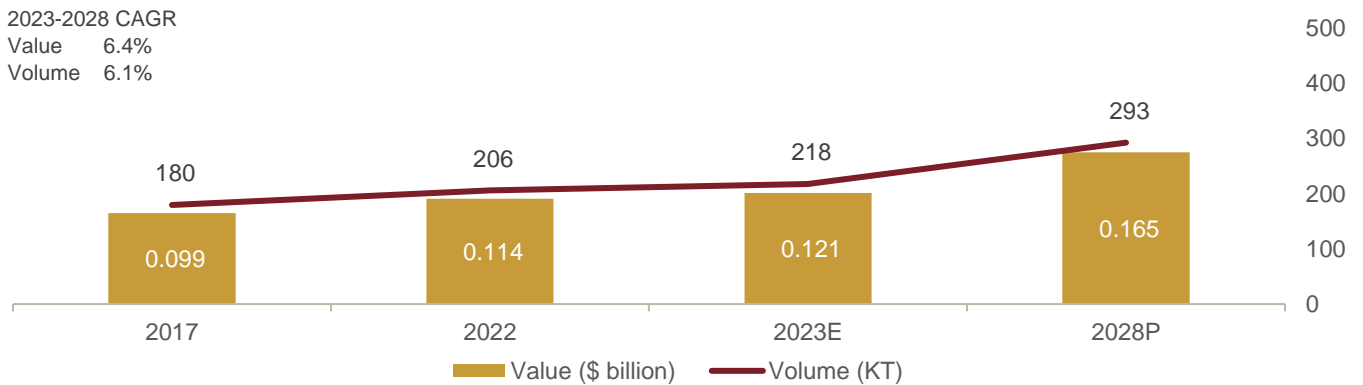
E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Increasing demand from tyre industry and footwear segment to boost rubber process oil market**

The rubber process oil market is expected to grow with a 5-yr CAGR of 6.4% to reach \$0.165 billion in 2028 from \$0.121 billion in 2023. Based on volume, the market is estimated at 218 KT in 2023 and projected to reach 293 KT by 2028, growing at 6.1% CAGR. The demand for rubber process oil in rubber processing is projected to increase as more industrial and automotive items, including tyre and other products, and footwear made with rubber, are used in India.

**Figure 36: Indian rubber process oil market**

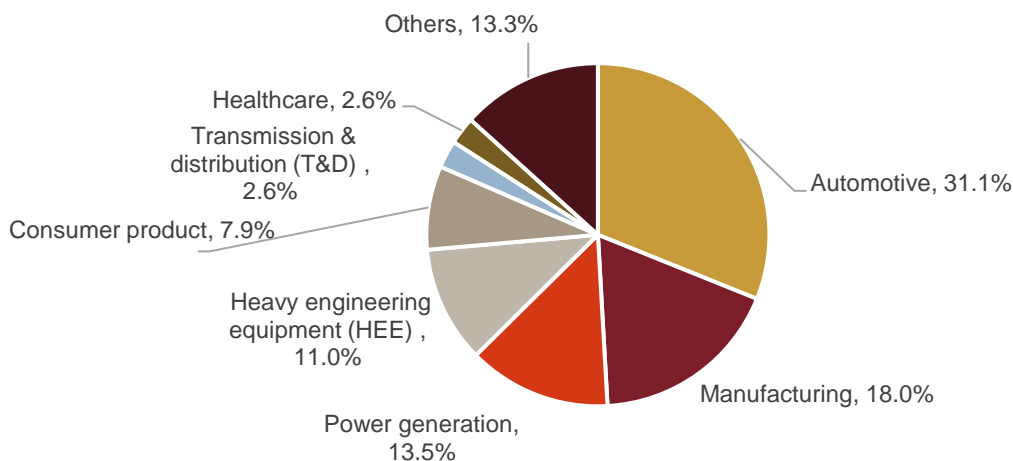


E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

## 4.2 Indian specialty oil industry by end-use segment

**Figure 37: Indian specialty oil market share by end-use segment in 2022**



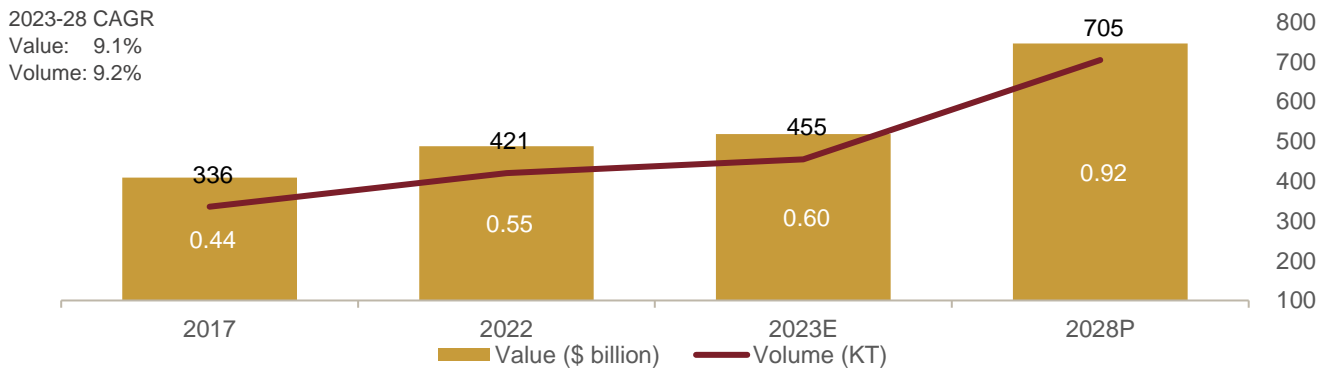
Consumer segment includes food & beverages (1.3%) and beauty & personal care (6.6%)

Source: CRISIL MI&A Consulting

### Consumer product segment to benefit from upgrading lifestyle, growing awareness, and easier access

The consumer product segment is expected to grow at 9.1% CAGR, reaching \$0.92 billion by 2028 from \$0.60 billion in 2023. The market volume is estimated to be 455 KT in 2023. This is expected to grow by 9.2% CAGR over the next 5 years, reaching 705 KT by 2028. One of the key elements affecting the market for beauty and personal care goods in India is the growing emphasis on personal looks, social status, personal hygiene, and wellness supported by the rising income levels. Increasing gourmet brands, growth in the dairy and bakery products, demand for packaged food and healthy alternatives, and growth in the nutraceutical market are some of the key market drivers of the food & beverages segment in India.

**Figure 38: Consumer segment in Indian specialty oil market**



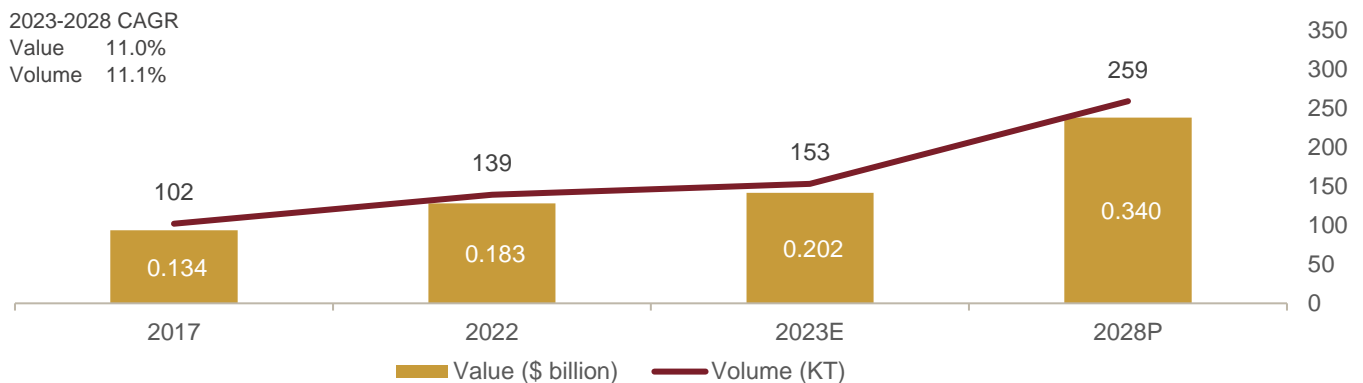
E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Indian healthcare segment to reach \$340 million by 2028**

Total demand from the healthcare sector is expected to be \$0.340 billion in 2028, ~68% higher than \$0.2 billion in 2023. This growth represents 11.0% CAGR over the next five years. Further, specialty oil demand from the healthcare sector is expected to rise to 259 KT by 2028 from 153 KT in 2023, exhibiting 11.1% CAGR. The pharma industry holds a strong growth outlook on the back of increased awareness for health, hygiene and vaccination. Demand gets a boost from the increasing insurance penetration and medical spending.

**Figure 39: Healthcare segment in Indian specialty oil market**



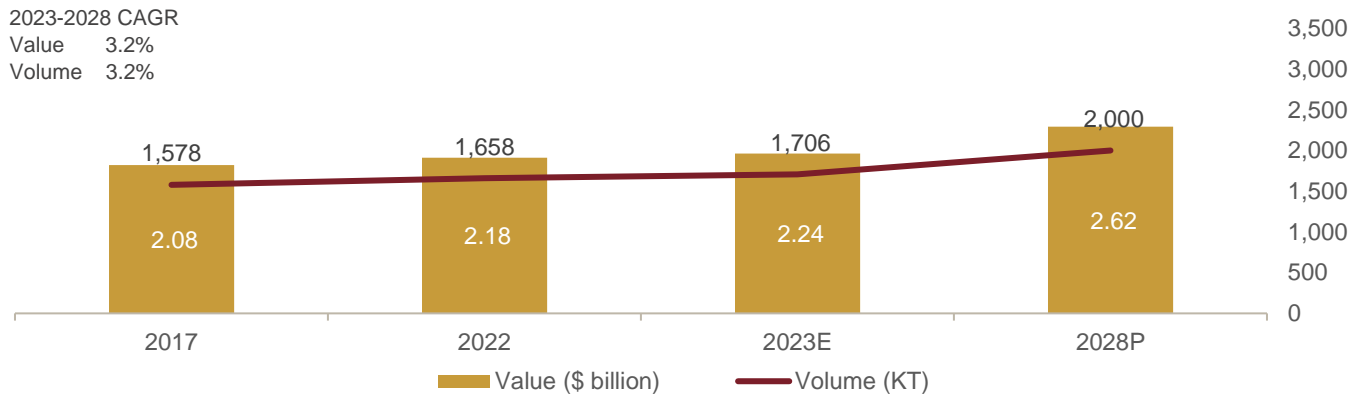
E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Automotive segment in India is expected to grow by \$377 million in the next five years**

India’s automotive segment is expected to grow at 3.2% CAGR, reaching \$2.62 billion in 2028 from \$2.24 billion in 2023. On a volumetric basis, we forecast it to reach 2,000 KT in 2028, expanding at 3.2% CAGR. Overall demand of the automotive oil market in India is driven by commercial vehicles. The sector outlook remains positive on the back of the improving economic outlook in the long run. Further, India is also in focus as an investment destination for lubricant projects by several international players, which supports the sector’s export outlook.

**Figure 40: Automotive segment in Indian specialty oil market**



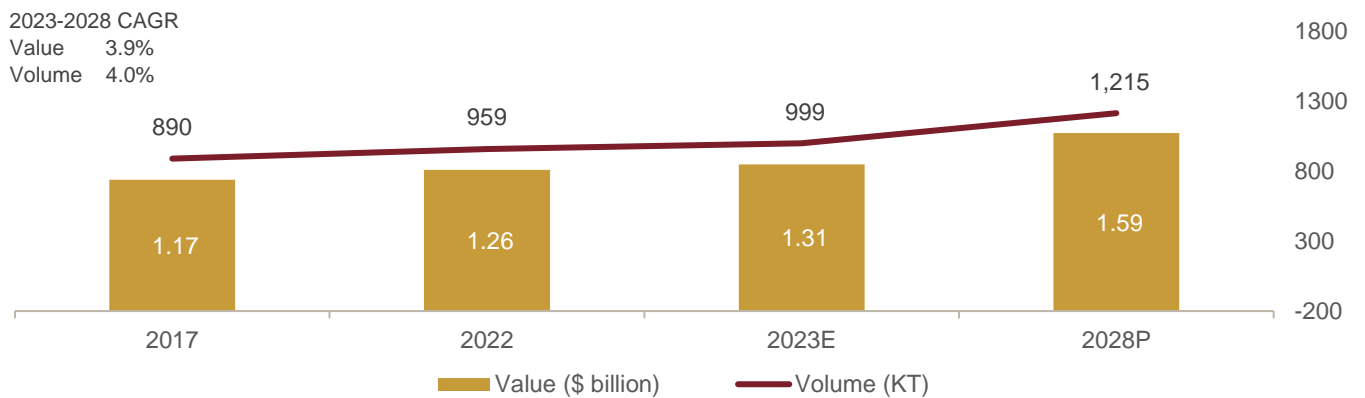
E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Manufacturing sector demand foreseen at 1,215 KT volume by 2028, valued at \$1.59 billion**

The manufacturing sector had the second largest market share in the Indian specialty oil market in 2023, with a value of \$1.31 billion. In India, the manufacturing industry is experiencing rapid expansion via government support as well as increasing investment from foreign manufacturing ventures.

**Figure 41: Manufacturing segment in Indian specialty oil market**



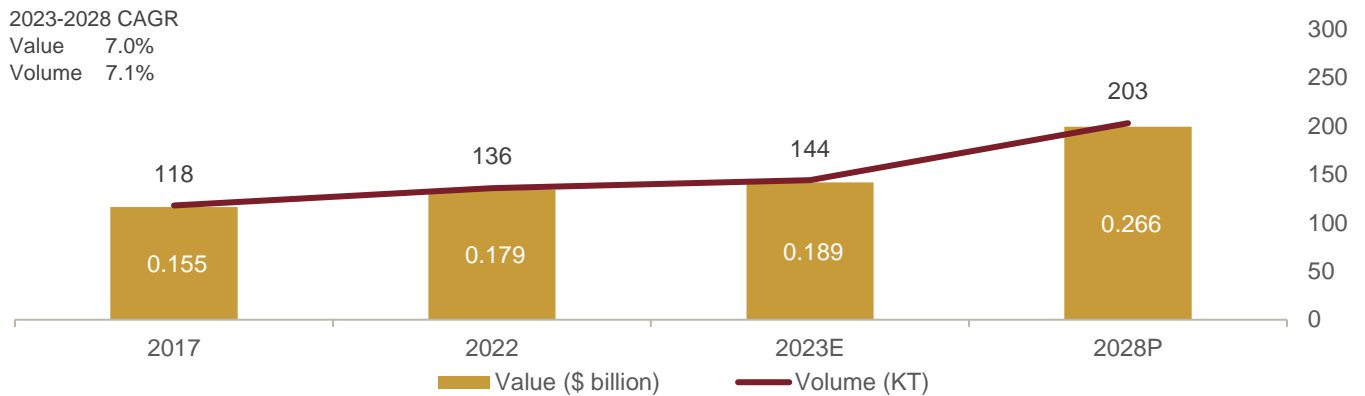
E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Demand from T&D sector to increase by \$77 million due to rising power demand and electricity access**

The T&D segment in India is estimated at \$0.19 billion in 2023 and is expected to grow at 7.0% CAGR, reaching \$0.27 billion by 2028. India is investing in expanding the T&D system and grid network to meet the expected rise in power consumption brought on by quick industrialization and urbanization.

**Figure 42: Transmission & distribution segment in Indian specialty oil market**



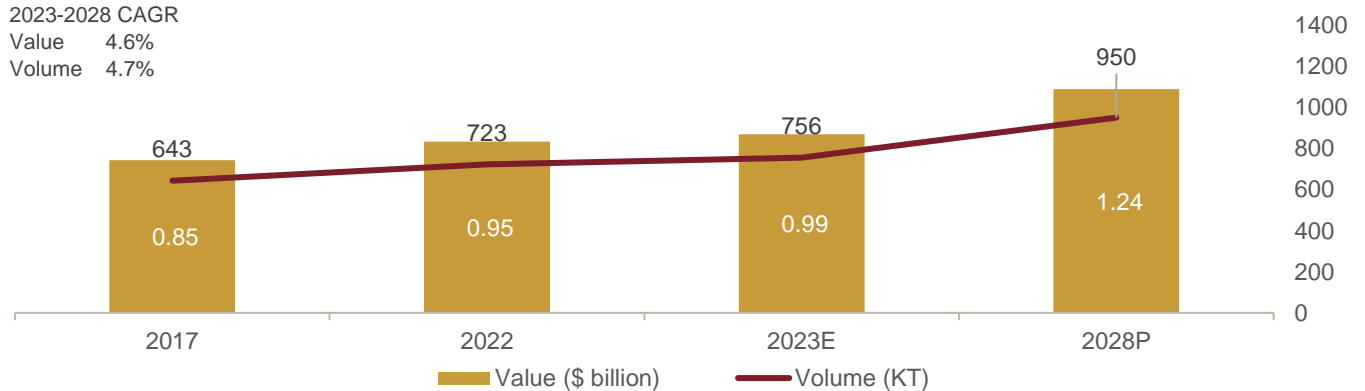
E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Power generation sector estimated to reach \$1.24 billion and 950 KT by volume in 2028**

Power generation segment will grow from an estimated at \$0.99 billion in 2023 to reach \$1.24 billion in 2028, expanding at 4.6% CAGR. From reliable non-conventional sources such as wind, solar, and household and agricultural waste to conventional sources such as coal, lignite, natural gas, oil, hydropower, and nuclear power, the demand for power in India has risen quickly and is anticipated continue growing in the years to come.

**Figure 43: Power generation segment in Indian specialty oil market**



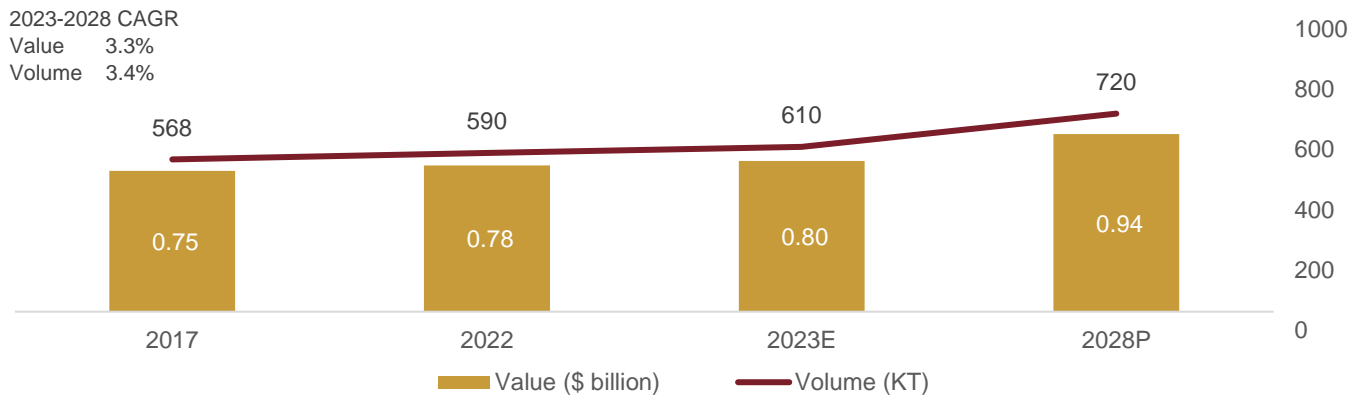
E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Growing industrialization and infrastructure to boost heavy engineering equipment**

The heavy engineering equipment sector in India was valued at \$0.80 billion in 2023 and is expected to reach \$0.94 billion by 2028, increasing at 3.3% CAGR. A considerable increase in industrial activity will enhance the usage of machinery in the sector.

**Figure 44: Heavy engineering equipment segment in Indian specialty oil market**



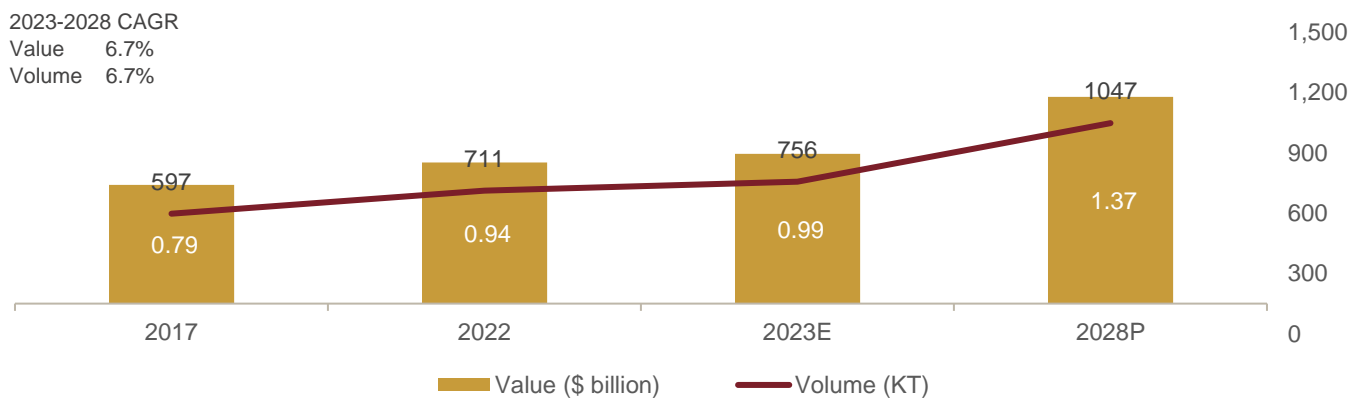
E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**Use for specialty oils to grow at healthy pace in other segments**

Other segments include polymers, textile, adhesives, rubber processing lubrications and others, which utilize these oils to perform different functions at different stages. It is expected to reach \$1.37 billion by 2028, growing at 6.7% CAGR. In 2023, its value was USD 0.99 billion, and volume was 756 KT.

**Figure 45: Other segment in Indian specialty oil market**



E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

**4.3 Key growth drivers for Indian specialty oil industry**

The Indian specialty oil industry is expected to reach \$9.30 billion in 2028 from \$7.3 billion in 2023, exhibiting a 5-year CAGR of 4.9%. The market expansion is being driven by the encouraging growth demonstrated by a broad range of end-use sectors, the steady increase in foreign direct investment, as well as growing government initiatives to support the country's economy.

**Favourable demographics**

India is one of the fastest-growing energy-consuming countries in the world. The country has a population of over 1.3 billion, which is to reach 1.5 billion by 2030 with number of households reaching ~376 million. Rising urbanisation is one of India's most important economic growth drivers since it will drive substantial investments in infrastructure development and support job creation, boost consumer spending and aid economic growth.

The country's urban population was 34% of total population as per the 2018 revision of World Urbanization prospects. The statistic is expected to reach 37% by 2025. This supports the country's strong consumption profile.

### **Rising disposable income**

India's per capita income, a broad indicator of living standards, clocked ~5.4% CAGR between fiscals 2013 and 2020, rising from Rs 65,538 to Rs 94,566. While the number dipped in fiscal 2021 because of the pandemic, it bounced right back in fiscal 2022 to reach pre-pandemic levels. Per capita income increased 6.0% over fiscal 2022 to reach Rs 98,118 in fiscal 2023. Rising disposable incomes can lead to increased consumption and spending on personal care and wellness.

### **Government initiatives**

The Government of India has launched PLI schemes for 14 sectors, which includes pharmaceuticals, food products, auto (automobile and auto components), and textiles. The scheme is expected to attract investment, enhancing core competency, and bringing cutting-edge technology, ensuring efficiencies, creating economies of scale, enhancing exports, and making India an integral part of the global supply chain. Government initiatives for infrastructure development and manufacturers extending their production capacities are projected to propel India's lubricant market in the near future.

### **Adoption of supply-chain derisking strategy**

China currently controls a significant portion of the global supply of lubricants. However, the Indian lubricant industry is anticipated to have a swift increase in foreign investment because of the strategy of companies across the world, and particularly in Europe, to derisk the supply chain.

### **Growing end-use applications**

#### **Pharma and consumer sectors poised for high growth**

Factors such as government initiatives for development of local manufacturing infrastructure and reducing dependency on imports, growing penetration of sales channel in tier 3 and 4 cities, rising living standards, and growing awareness about hygiene would drive growth across sectors such as pharma, personal care, and food and beverages.

#### **Increasing demand for two-wheelers, passenger, and commercial vehicles to aid automotive segment**

By 2030, India is expected to be the third-largest automobile market globally in terms of volume. The Indian automotive market will be driven by rising income, a younger population, increasing vehicle penetration, growing R&D hubs, and government initiatives in the automotive sector. The latter includes Amtanirbhar Bharat Abhiyaan and PLI scheme to boost manufacturing of advanced automotive technology products and attract investments in the automotive manufacturing value chain. Other significant growth drivers of the Indian automotive business include easy access to credit and financing, low-cost steel manufacturing, flourishing logistics and passenger transport sector, and the availability of cheap labour.

#### **PLI scheme to provide boost to industrial investments in the short to medium term**

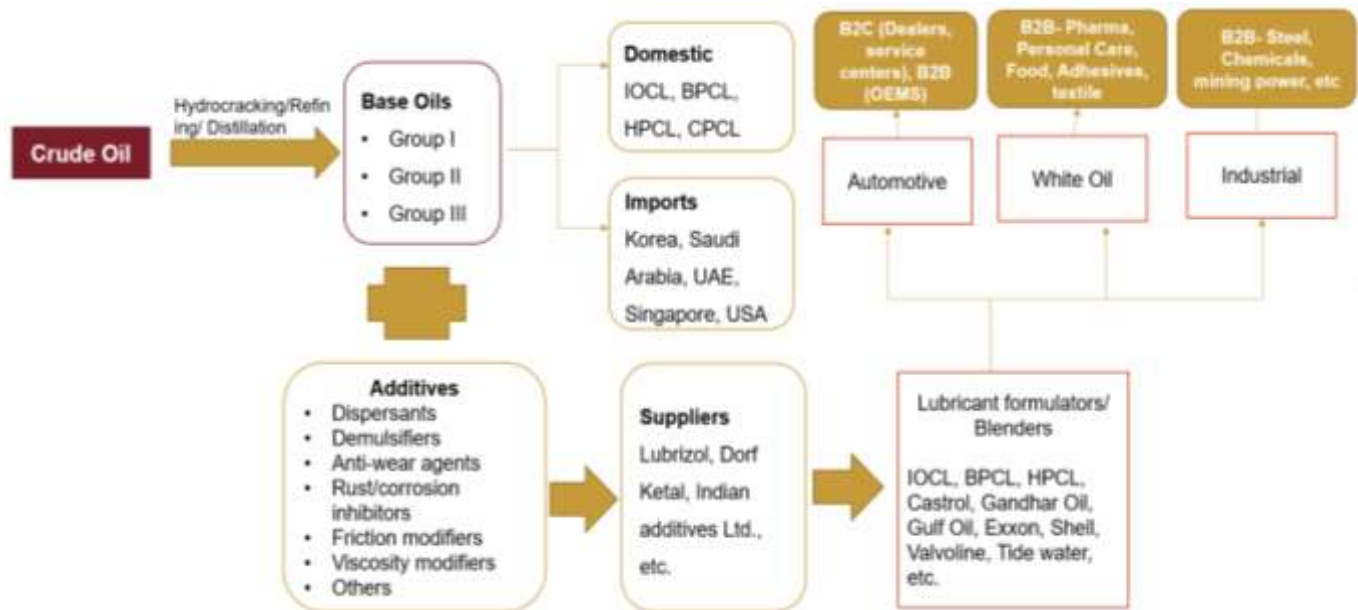
Construction spends across industrial investments in fiscal 2023 are seen rising 6-10% due to a high base in fiscal 2022 where the sector grew due to deferred investments from fiscal 2021 and capex investments from the PLI scheme coming online. Based on an analysis of eight key sectors, CRISIL MI&A Consulting estimates construction investment in the industrial segment at Rs 3,200 billion between fiscals 2023 and 2027, rising 1.2 times over spends seen in fiscals 2018 to 2022. The rise in investments is projected due to inclusion of PLI scheme in the capex investments of industrial sector.



## 5 Supplier of raw materials

### 5.1 Supply chain flow chart for oil

Figure 46: Typical supply chain in Indian market



Source: CRISIL MI&A Consulting

#### Assessment of base oil supply

Group I base oils have higher sulphur content (>0.03%) and less than 90% saturates which makes them less preferred compared to Group II and Group III base oils. Prior to being used to create white oils, Group I base oils must undergo a lengthy purifying procedure. As a result, it is more expensive to produce white oils from Group I base oils. In addition, the supply of Group II and Group III base oils have grown while that of Group I base oils has shrunk. Since Group I base oils have a greater processing cost, white oil providers favour the Group II over the former. Additionally, Group II base oils are usually chosen over Group III base oils due to the latter's higher price. The selection of base oils to produce white oils also depends on the grade of base oil's availability and intended end use.

The Asia-Pacific region account for ~48% of the global base oil supply. China presently has the largest capacity in the Asia-Pacific, accounting for nearly 21% of total global production. South Korea is the second-largest producer of base oil in Asia, contributing almost 12% of global output. Together, Japan, South Asia, Australia, and other Pacific nations make up more than 15% of the global capacity. India is primarily import-dependent for base oil since domestic production accounts for 26-30% of the total requirement. Leading specialty oil manufacturers in India import base oil due to host of factors such as volume assurance, unavailability of specific grades, flexibility in credit period.

#### Import of key base oil grades

Key lubricant manufacturing companies in India directly import base oil stocks from refiners since they require significant volumes annually. However, other companies, which have relatively smaller requirements, procure base oil via traders. Majority of base oil imports to India are sourced from the Middle East and South Korea, which account for 65-70% of total imports. Some of the key base oil grades being imported to India across Group-I base oils are SN-150, SN 300, SN 500; Group-II grades such as N-150, N-500, Aramco Prima; and Group-III grades

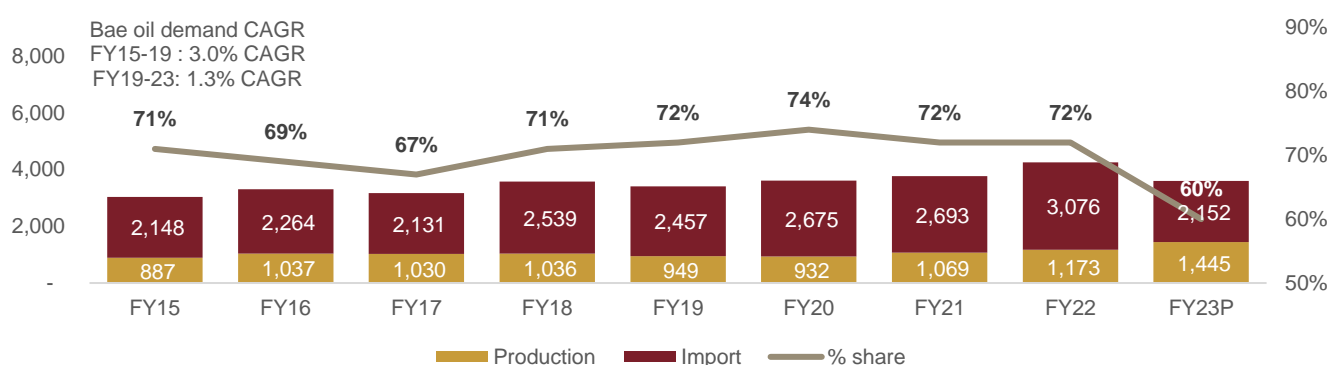
such as Aramco Ultra 2,3 and 8. These grades find applications in formulation of white oil, automotive and transformer specialty oil.

**Figure 47: Base oil classification**

	Manufacturing Process	Saturate level	Sulphur level	Viscosity Index
Group I	Solvent refining	<90%	>0.03%	80-120
Group II	Hydrocracking	>=90%	<=0.03%	80-120
Group III	Catalytic De-waxing	>=90%	<=0.03%	>=120
Group IV	Chemical Reactions	100% Poly Alpha Olefins		
Group V	All Others not included in group I, II, III and IV			

Source: CRISIL MI&A Consulting

**Figure 48: Base oil demand in India by source of supply (thousand metric ton)**



Source: PPAC, CRISIL MI&A Consulting

The average share of imports in the base oil market at 72-74% over the past eight fiscal years, which is projected to drop to 60%. Base oil demand has seen a significant boost since India's adoption of Bharat Stage VI (BS-VI) norms in April 2020. But, base oil demand is expected to drop in FY23 mainly due to drop in import volume largely due to geopolitical issues and sharp rise in freight cost. To meet the new emission standards, original equipment manufacturers (OEMs) will need to incorporate several hardware changes. Therefore, demand for base oil is likely to rise in India as more people drive vehicles that adhere to BS-IV emission standards.

India still lags other countries in terms of its industrial facilities and about 60-70% of India's base oil needs are met by imports from the UAE, Saudi Arabia, South Korea, United States, and Singapore. Also, major international companies such as Repsol, Shell and Exxon are expressing greater interest to invest in the domestic market. India's base oil demand is anticipated to increase significantly over the next five years because of trade, Group I

base oil plant closures, a switch to better-performing heavy group base oils, the addition of new plant capacities, and technological advancements in MEA manufacturing facilities. The pandemic severely affected the market as a whole and the Indian economy. With a consistent CAGR expected in the projected years, the expansion of the market may provide a new player an investment avenue.

## 5.2 Key base oil manufacturers

**Table 5: Base oil manufacturers**

S. No	Key base oil manufacturers	Country
1	Chevron corporation	U.S
2	Exxon Mobil Corporation	U.S
3	Shell Plc	U.K
4	Saudi Aramco	Saudi Arabia
5	Sinopec Limited	China
6	S-Oil Corporation	South Korea
7	SK Lubricants	South Korea
8	Ergon Inc	U.S
9	Repsol S.A.	Spain
10	Avista Oil	Germany

Source: CRISIL MI&A Consulting

### The Asia-Pacific is the dominant region in the global base oil market

The Asia-Pacific is the largest base oil market over the predicted period. Base oil consumption is developing in the region because of rapid urbanisation, rising disposable income, and increased industrialisation in the automotive, food processing, cosmetics, textile, and other manufacturing sectors. APAC's largest base oil market throughout the predicted period will be China. This can be ascribed to rising demand from the automotive and transportation industries. Rising mining activity, as well as manufacturing and machinery industries, are supporting the country's base oil market's rapid expansion. The market is also being fuelled by the availability of cheap labour and raw materials.

## 5.3 Importance of suppliers in the supply chain

The selection process for a specialty oil supplier is an important consideration for end users. Identifying strengths and weaknesses is crucial to the success of participants across the value chain such as OEMs, distribution channel partners and end users. Performance and quality of the completed product are largely determined by the component of finished lubricants or specialty oils.

### Supply of relevant grades

Some applications involve specific attributes such as thermal stability, viscosity, purity levels, volatility, and capacity to dissolve additives and impurities. These are just a few of the performance characteristics that significantly impact the finished product. Given the specifications involved, there are limited suppliers with requisite competency to meet the requirements as Indian suppliers do not supply high quality base oil grades. Therefore, partnering with the most competent specialty oil supplier in these situations can aid in ensuring the best supply. Suppliers' understanding of the importance of quality can help the specialty oil manufacturers continually maintain reputable quality, despite market trends. Procurement of relevant grades of specialty oil is critical for manufacturers of end-use products or OEMs.

### Quality assurance

Many businesses need a variety of specialty oil recommendations for various applications and procedures that may be spread out over several different locations or even be centralised at a single huge industrial facility. They require a specialty oil supplier with a track record of success in a variety of markets and industries. Utilising specialty oils that have been produced in facilities adhering to international industry standards and have passed quality tests, is crucial for risk reduction (subject to third-party audits). At the same time, it becomes essential for suppliers to adhere to a variety of regulations, registrations, and standards. Quality assurance is very important for white oils used in industries such as personal care, pharmaceuticals, and food, as the end products are either ingested or meet human skin.

### Supply guarantee

A supplier's competitive advantages help manage the supply chain effectively. Also, the complexity and cost of the supply chain can be decreased by carefully choosing base oil providers. Therefore, evaluation of a supplier's capacity to deliver goods and services is a crucial part of the selection process. Suppliers' product mix, capacity and geographic diversification are some of the key criteria. Suppliers with large quantities and multiple plants reduce the necessity of expensive requalification testing. Partnering with a specialty oil supplier having large capacity and operations footprint enables customers to receive products in different regions in a timely manner.

### Pricing transparency

It is important for the manufacturer to procure specialty oil at fair price as this impacts the competitive positioning of the manufacturer in the market. Good oil and lubricant manufacturing companies do not compromise on the quality and pricing of their products. Their prices are neither unreasonably raised nor lowered. Leading manufacturers of specialty oils consider index-linked pricing, which is based on a recent historical trade price level for base oil and additive rates as this enables them in the formulation of a transparent pricing policy.

## 5.4 Overall pricing methodology

### Cost structure breakdown for specialty oils

Prices for specialty oils that are included in this research are extremely susceptible to changes in the cost of raw materials. Most of the expense in the cost structure is made up of raw materials like base oils and additives.

- **Base oils:** Base oils are made from crude oil directly. The production, availability and pricing of base oils are all directly impacted by changes in the price of crude oil. More than half of the base oil cost structure is made up of crude oil because the price of crude oil plays a considerable role in determining how much basic oils cost.
- **Additives:** The type of additives used depends on the application and oils used. The proportion of additives changes depending on how many are utilised in the final product.
- **Others:** Remaining costs are split between shipping, packing, storage, blending and filling, as well as several other crucial components.

### Specialty oil pricing approach

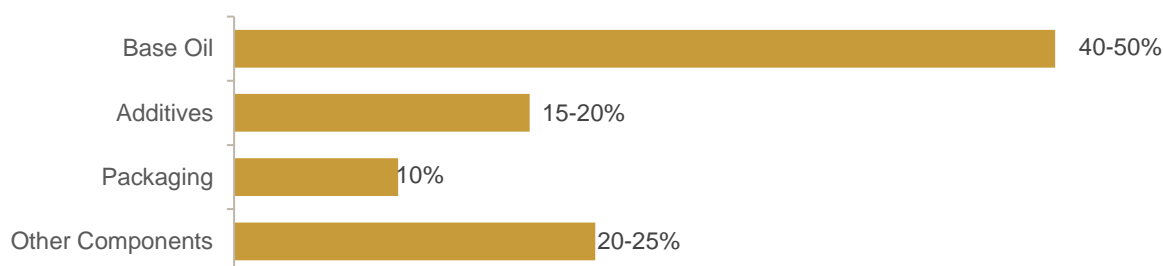
**Index-based pricing:** The use of a market or raw material index (or group of indices) to calculate and regularly refresh prices is known as index-based pricing. It is usually dependent in situations where the final product is heavily dependent on one primary commodity raw material or made up of multiple volatile additives.

Index-based pricing is the process of calculating and periodically updating prices using a market or raw material index. Index-based pricing emerges to facilitate customer contract negotiations and make it easier for buyers and

sellers to sign longer term contracts. It results in a transparent pricing method and fewer hassle of negotiations and assists suppliers in protecting their profits in volatile markets.

**Other approach:** The other approach involves price formulation by suppliers based on previous raw material price fluctuations and end-use demand growth. Non-index-linked approaches don't consider the present demand and supply conditions of raw materials and offer no insight into future price trends, leading to unfair price formulations that may negatively affect supplier margins.

**Figure 49: Specialty oil cost structure breakdown by value**



*Note: Other components include import duties, manufacturing costs and freight costs*

*Source: CRISIL MI&A Consulting*

## Gross margin trend in specialty oil industry

Gross margin spread of the Indian specialty oil market ranges from 13% to 23%. Gross margin of manufacturers is impacted by the volatility of raw material prices, which is further influenced by a host of factors such as global supply and demand scenarios, geopolitical issues, foreign exchange movements, and overall market sentiments. However, leading companies have better risk management practices including index-based pricing, strict inventory control, pass-through contracts to minimise risk in case of supply orders, and financial hedging to minimise the impact of exchange rate volatility.

## Key pricing impact factors

### Fluctuation in base oil prices

In the specialty oil market, a major component of raw materials is the base oil that is derived from vacuum gas oil, which is by-product of crude oil. Base oil constitutes 40-50% of the price of finished specialty oil products. Since the base oil is derived from crude oil, any increase in crude oil prices would affect the production cost. Increases in production costs as a result could have a detrimental impact on sales volume, in turn, on the financial situation and operational results. Any such increase in raw material costs in the future could have a negative impact on the ability to set competitive prices for products.

### Additives

Additives constitute 15-20% of the price of finished specialty oil products. Additives like rust inhibitors, dispersants, anti-wear agents, viscosity index improvers, detergents and demulsifying agents are added improve the performance of products.

### Packaging

Packaging cost, which accounts for 10% of the cost of lubricants, is crucial for their safe handling. Packaging cost have continued to rise after Covid-19 due to increase in plastics and steel prices. As these products are being used in the containing and transportation of specialty oil, it has had an adverse effect on the pricing of the products.

### Other components

## Consulting

20–25% of the cost of finished specialty oil is made up of import taxes, manufacturing expenses and freight charges. Increasing imports of products has had a negative impact on specialty oil pricing. A significant contributor to this is the cost of shipping, which will inevitably increase as oil prices rise. Cost of manufacturing will continue to rise because of the hike in import tax rate and freight charges.

**Economic scenario**

Economic elements that can have both a positive and negative impact on a product's pricing include labour costs, changes in currency exchange rates, government fiscal and monetary policies, inflation rates, etc. Deterioration of the economic condition of any region negatively impacts the pricing trends of products, resulting in lower margins and reduced returns. Further, supply chains and production capacities of several sectors have been impacted by the pandemic.



## 6 Outlook on the specialty oil industry in India

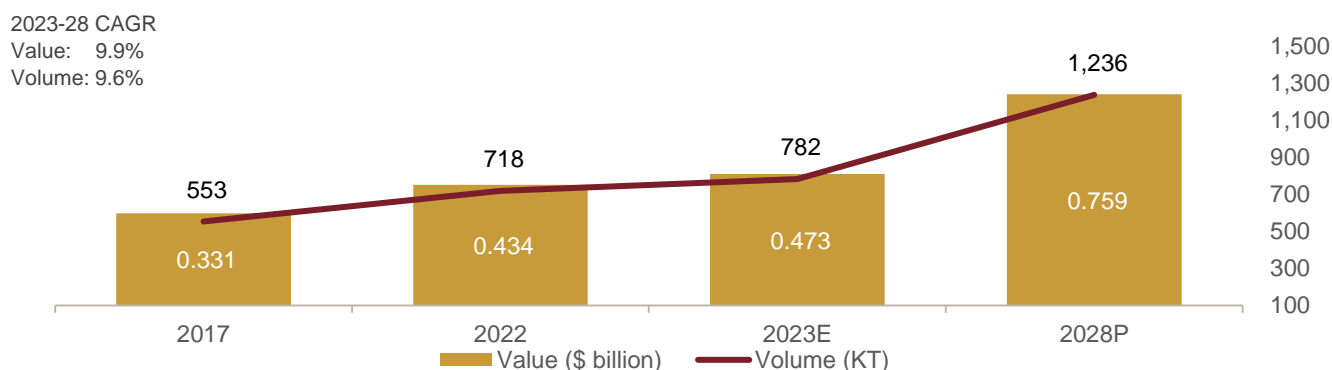
### 6.1 White oil

#### Industry size

The Indian white oil market is estimated to be 782 KT at the end of 2023. Market volume is expected to grow to 1,236 KT by 2028, at a CAGR of 9.6% during 2023-2028. Further, the market is valued at \$0.473 billion by 2023-end. It is anticipated to grow to \$0.759 billion by 2028 at a CAGR of 9.9% over the next five years. Since the consumer segment accounts for ~40% of the entire Indian white oil market in 2022, growth of this segment and the white oil market are directly correlated. Additionally, from 2023 to 2028, the CAGR of the consumer segment will be consistent with that of the white oil market in India.

Market growth is anticipated to be driven by an improving standard of living and rising demand for cosmetics. White oil also finds significant use in the pharmaceuticals sector. Positive outlook for the pharmaceuticals is one of the key growth drivers.

**Figure 50: Indian white oil market size**



E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

#### Production process

White oil is an excessively refined mineral oil that is extremely pure, stable, colourless, odourless and non-toxic. Due to these characteristics, it is ideal for pharmaceuticals, cosmetics, and chemical processing. It is not white, but rather crystal clear. Depending on the process, white oils can be made with a variety of feedstocks.

Typical paraffinic basic feedstocks used to produce white oils, are specially purified before use. These base materials range from conventional base stocks for the more ancient acid treatment method, to vacuum gas oils for the more widely utilised two-stage hydro treating technique. Both techniques provide colourless, odourless and flavourless oils that are thermally stable and free of any contaminants that might affect how they are used in future, such as aromatics, sulphur or other pollutants. Purity, lack of colour, odour and taste are just a few of the distinctive qualities that this method yields.

#### End-use segments

White mineral oil is used in various industries such as cosmetics, pharmaceutical, food and plastics. White mineral oil is used to manufacture products where the safety requirements are high. For instance, white oil used in the cosmetics and pharmaceuticals industries must be of pharmaceutical quality and cannot include any compounds that are harmful to human health.

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In the cosmetics industry, this is typically used as a principal or auxiliary ingredient in the manufacture of various products such as cream and lotion formulations, baby oil, suntanning products, sun blocks, cosmetics, makeup removers, depilatories, and bath oils. In the pharmaceuticals industry, it is used to make laxatives, formulations for ointments/ pomades, and gelatine capsules. It is also used in the veterinary drug sector to create animal vaccines.

White mineral oil is widely used in the food industry as lubricating oils used in the industry must be safe for contact with food and free of potentially harmful ingredients for human health. Products used for this purpose must adhere to tight regulations, satisfy applicable requirements, and get all appropriate certifications. Consequently, white mineral oil is favoured in a variety of food processing steps, especially for producing lubricating oils for use by food and beverage manufacturers. In food processing plants, grease, hydraulic system oils, gear oils, and compressor oils made from white mineral oil are preferred due to their likelihood to come into contact with food products. Another industry that regularly uses white mineral oil is plastics and elastomer. It is employed in the manufacture of polystyrene, PVC, and thermoplastic rubber. White mineral oil may also be found in common household items including glues, toys, wood products, cleaning supplies, lamp oil and glossing and polishing products.

**Table 6: White oil application overview in 2022**

Key applications	Application usage areas	% Share (by value)
<b>Consumer products</b>	Beauty & Personal Care (BPC): Used as emollients and moisturisers in skin care creams, hair products as hair oils and styling gels, shaving creams, and lotions Consumer food: Food grade white oils are commonly used as a lubricating agent in food processing, releasing agent, and a de-foaming agent	40.4%
<b>Pharmaceuticals</b>	Bases for tropical formulations such pomades, balms, creams, and lotions; a delivery system for injectables, pharmaceutical active components, vaccinations, and laxatives	13.7%
<b>Plastics/Polymers</b>	Extensors, dyes, lubricants, plasticisers, softeners and plasticisers for polythene, rubber and utilised as a catalyst vehicle	16.9%
<b>Adhesives and sealants</b>	Applied in adhesive and hotmelt compositions	8.8%
<b>Textiles</b>	Employed in the production of wool, pulverisation of cotton bales and production of specialised lubricants for textile machinery	13.5%
<b>Others</b>	Includes agrochemicals, paints, and papers. Used as a solvent or ingredient in oil paint, high molecular weight polyethylene, rubber, and leather manufacturing	6.7%

Source: CRISIL MI&A Consulting

### Indian consumer products industry

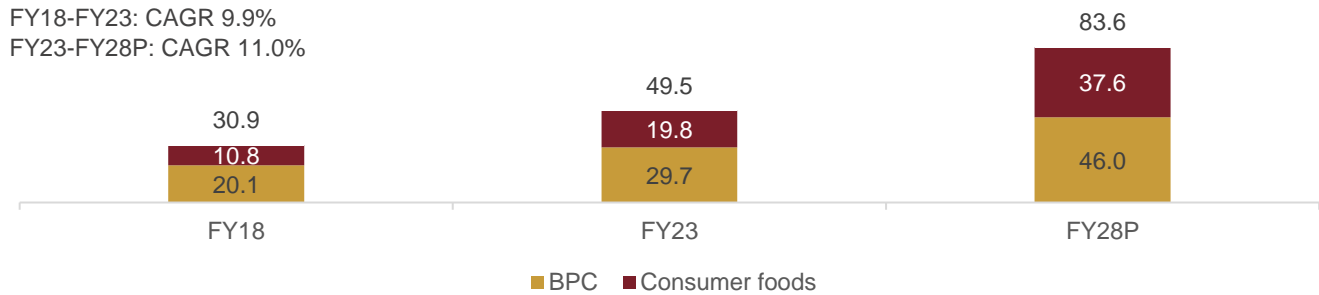
The Indian consumer product industry size encompassing BPC and F&B segments was \$49.5 billion in fiscal 2023 and is anticipated to grow to \$83.6 billion by fiscal 2028 at a CAGR of 11.0%. It has recently been growing steadily in India.

### Beauty & personal care segment (BPC)

The Indian BPC market is valued an estimated \$29.7 billion in 2023 and anticipated to grow to \$46.0 billion by 2028. Key growth drivers for this segment are rise in purchasing power, improving standard of living, growing awareness among youth about personal hygiene and wellness, image consciousness and shift in preference among customers from basic nourishment-based products to premium/ specialty problem-solving products.



**Figure 51: Indian consumer product industry (\$ billion)**



P: Projected

Note: consumer food sub segments include bakery products, chocolates & confectioneries, snacks, ready to eat products

Source: CRISIL MI&A Consulting

### Consumer food segment

Within consumer food segment, bakery products have shown stable growth in fiscal 2023, on account of better volume growth in premium and healthy categories biscuits. With the easing of mobility restrictions, the out-of-home consumption of snacks has increased, resulting in strong revenue growth in fiscal 2023. Improved penetration of the organized sector amid the pandemic and new product offerings in regional flavours will drive growth of the industry in fiscals 2024 and 2025. There is a strong demand from B2C channel due to convenience and increase in demand from key sectors such as hotels, restaurant and catering, railways, and airlines.

Further, the industry benefits from the strong government support, particularly the PLI scheme. The Ministry of Food Processing Industries (MoFPI) unveiled the PLI scheme in May 2021. The MoFPI has formulated the PLI scheme for the food processing industry with an outlay of Rs 10,900 crore. The scheme will be implemented over a six-year period from fiscals 2022 to 2027.

### Competitive landscape

There are limited number of players involved in the manufacturing of white oil in India. Key players include Gandhar Oil, Raj Petro, Apar Industries and Savita Oil, accounting together for 70-75% of the domestic market by value. Gandhar Oil is amongst top 2 players in Indian white oil market and accounts for ~26.5% of market share.

These top companies have the infrastructure and manufacturing scale and exhibit high level of integration across the value chain. These businesses have made a name for themselves as leading producers, and they concentrate on product development and research.

### Indian pharmaceuticals industry

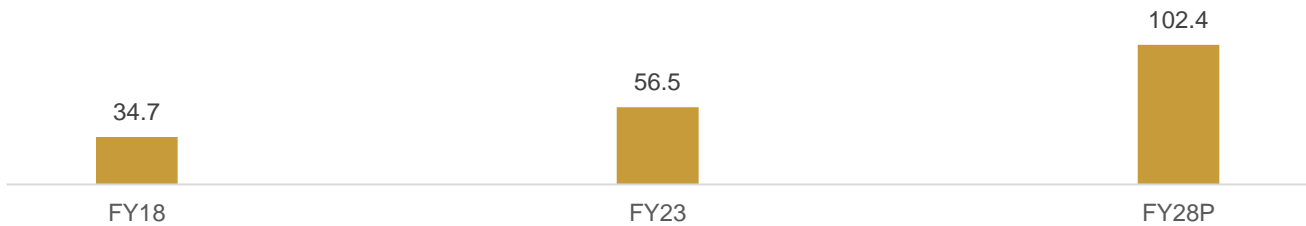
Indian pharmaceuticals industry is estimated to be ~\$56.5 billion in 2023, ranking third in terms of volume and 14<sup>th</sup> in terms of value. 65-70% of the WHO's vaccine requirements are sourced from India. India has over 80 pharma clusters, 10,500 manufacturing facilities, and 500 API manufacturers with ~8% share of the global API industry. Also, India is the largest supplier of generic medicines and holds ~20% share of global supply. The country manufactures 60,000 different generic brands across 60 therapeutic categories, and exports these to over 200 countries. Thus, the Indian pharmaceuticals industry plays a significant role globally.

Further, the industry holds strong potential on the back of multiple drivers such as rising demand for vaccine manufacturing, growing opportunities in API manufacturing, and rising demand in the Indian market owing to an ageing population, improving insurance penetration, booming medical tourism, and rising per capita income. All these factors are expected to drive the industry growth of 12.6% over the next five years..

### Consulting

**Figure 52: India pharmaceuticals industry development (\$ billion)**

FY18-FY23: CAGR 10.2%  
FY23-FY28P: CAGR 12.6%

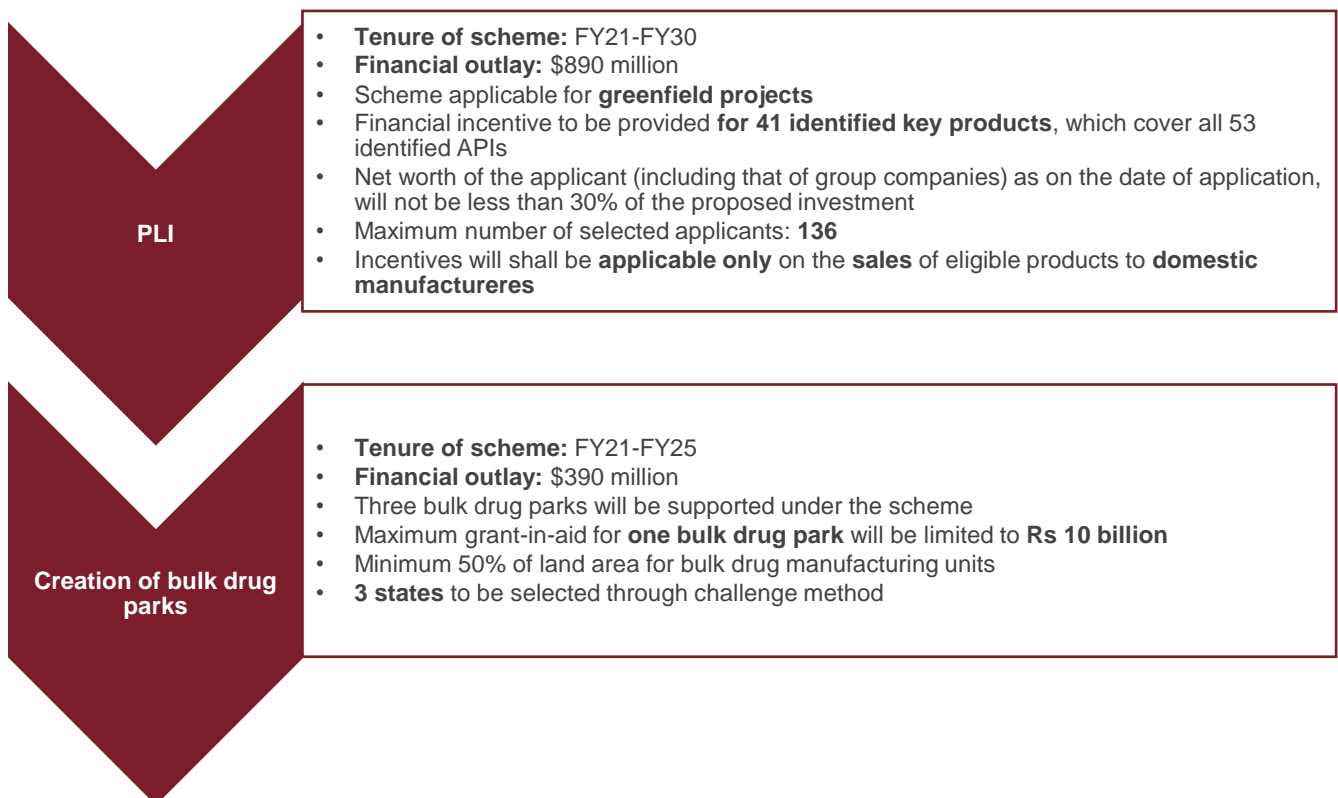


P: Projected

Source: CRISIL MI&A Consulting

Further, the industry benefits from the strong government support, particularly the PLI (production linked incentive) scheme.

The Union Cabinet, on March 21, 2020, approved the following schemes for the development of the Indian bulk drugs sector.



Source: Government documents

The above-mentioned schemes are aimed at providing a regulatory boost to the sector by reducing the manufacturing cost of bulk drugs. One of the major factors for China’s dominance in bulk drugs is the regulatory support it gets from its government, with common facilities across plants and various subsidies being provided, which helps them bring down the cost considerably. However, Indian government is also looking at creating common infrastructure facilities and reduce dependence on some critical drugs.

In addition, the ongoing supply-chain de-risking strategy of global companies, resulting in several multinationals undertaking proactive steps to reduce dependence on China for their manufacturing operations and looking at India

as an alternative option, provides the opportunity for manufacturers in India. This includes domestic formulations-focused contract development and manufacturing companies to capture a larger market share. Accordingly, the Government of India has approved the PLI scheme for pharmaceuticals for fiscals 2021 to 2029. This is expected to promote innovation for the development of complex and high-tech products, including products of emerging therapies, as well as improve accessibility and affordability of medical products.

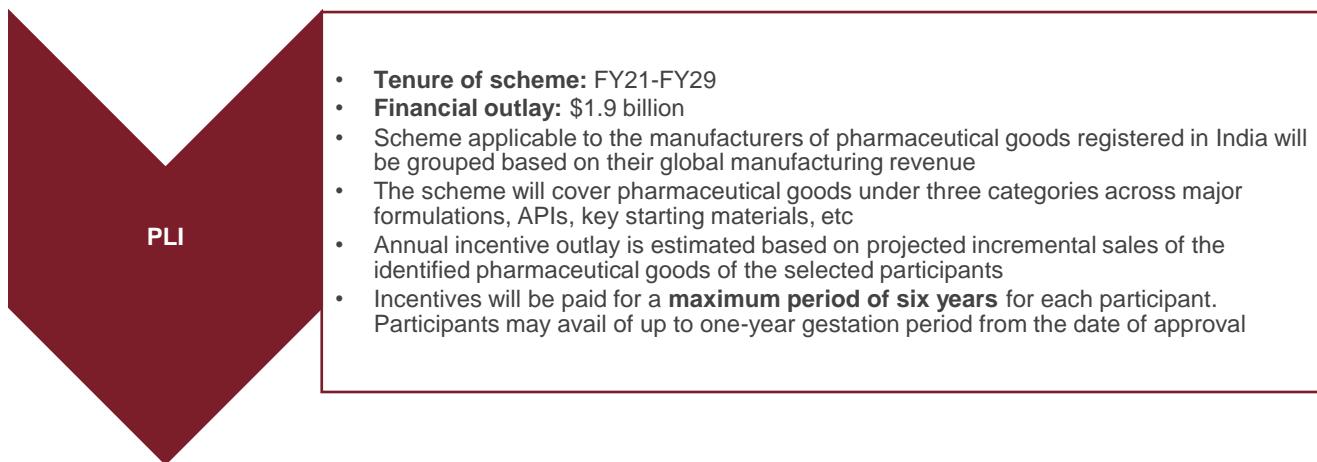
The PLI scheme aims at enhancing India's manufacturing capabilities by increasing investment and production capabilities. Also, Indian players plan to upgrade their offerings and move towards higher value products (e.g., API products) in the pharmaceuticals sector. The government expects the PLI scheme to bring in investment of ~\$1.93 billion in the pharmaceuticals sector. The PLI scheme also specifically covers complex generic drugs and patented drugs or drugs nearing patent expiry.

### Scheme to reduce Chinese dependence in medium term

Further, eligibility criteria for the scheme works to the advantage of a few select players since for each product under the fermentation-based and chemically synthesized categories, the number of manufacturers has been capped at two and four, respectively. The scheme does provide an impetus to industry growth as more and more capacities come in.

### PLI 2

The Government of India, in its notification in March 2021, extended the PLI to formulations as well as API, key starting materials not covered under previous notification of PLI scheme.



- **Tenure of scheme:** FY21-FY29
- **Financial outlay:** \$1.9 billion
- Scheme applicable to the manufacturers of pharmaceutical goods registered in India will be grouped based on their global manufacturing revenue
- The scheme will cover pharmaceutical goods under three categories across major formulations, APIs, key starting materials, etc
- Annual incentive outlay is estimated based on projected incremental sales of the identified pharmaceutical goods of the selected participants
- Incentives will be paid for a **maximum period of six years** for each participant. Participants may avail of up to one-year gestation period from the date of approval

Source: CRISIL MI&A Consulting

The objective of the scheme is to enhance India's manufacturing capabilities by increasing investment and production in the sector and contributing to product diversification to high value goods in the pharmaceutical sector. One of the key objectives of the scheme is to create global champions out of India who have the potential to grow, and scale using cutting-edge technology and thereby penetrate the global value chains.

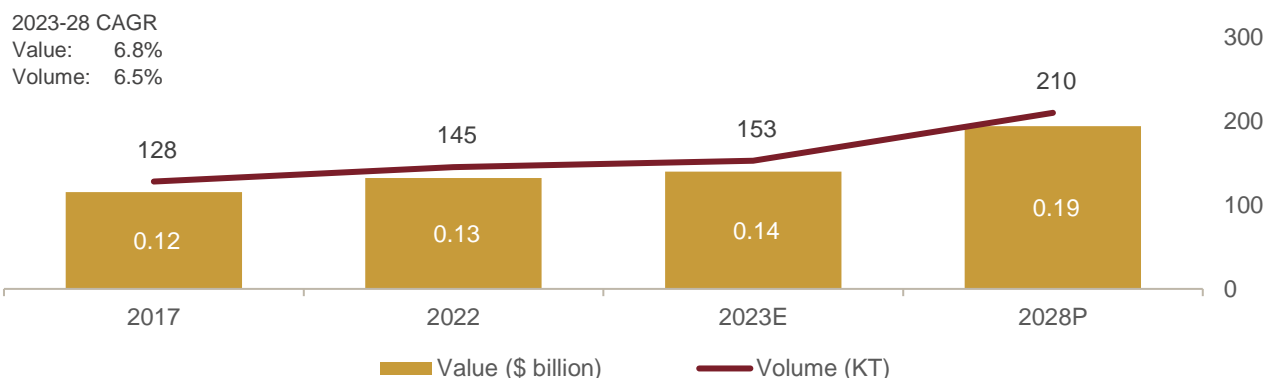
## 6.2 Petroleum jelly

### Industry size

The volume of the Indian petroleum jelly market is 153 KT as of 2023 and is anticipated to increase at a CAGR of 6.5% to 289 KT over the next decade. The market value is estimated at \$0.14 billion and is expected to reach \$0.19 billion by 2028, at a CAGR of 6.8% over the forecast period. Petroleum jelly is a blend of microcrystalline

wax, paraffin wax and Grade 2 base oil. It is used in a variety of industrial lubricating and finishing processes as well as in pharmaceutical compositions.

**Figure 53: Indian petroleum jelly market**



E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

## Production process

Petroleum jelly is a refined mixture manufactured from petroleum, particularly the paraffinic form, and semi-solid/saturated hydrocarbons. It is mostly used in emulsion form in cosmetics and pharmaceutical industries to make a variety of creams, ointments, lotions, and other goods. Commercial petroleum jelly is used to make lubricants and grease. Hydrocarbon feedstock is converted into synthesis gas. At least two streams of heavy and light hydrocarbons, each including several olefins and paraffins, are created from the synthesis gas. A dialkyl peroxide initiator is mixed with a variety of paraffins and olefins to produce petroleum jelly.

## End-use segments

The end-use segments of petroleum jelly include pharmaceutical, cosmetics, personal care, food, textile, and others. The pharmaceutical and medical segments are anticipated to experience extremely rapid revenue growth during the projection period, thanks to the increased use of petroleum jelly as a maintenance therapy for atopic dermatitis, a powerful occlusive moisturizer, and for prevention of skin infections following ambulatory procedures. Petroleum jelly helps reduce the amount of air loss to the front of the masks and offers an additional barrier against skin irritation triggered by surgical spectacles. Petroleum jelly is generally accessible in all healthcare settings and provides a practical and affordable method for dermatitis treatment and prevention.

## Competitive landscape

The Indian petroleum jelly market is dominated by Gandhar Oil, Raj Petro, Apar Industries, Savita Oil, and Columbia Petrochem.

## 6.3 Other specialty oils

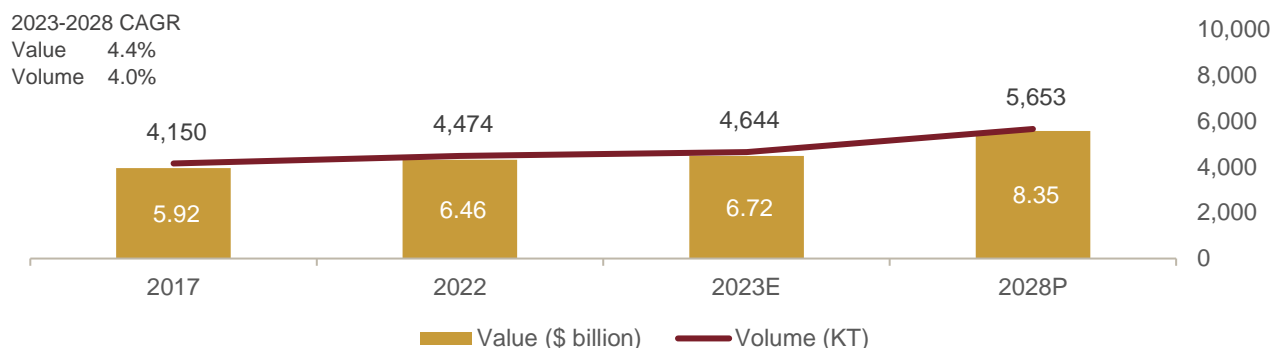
### Industry size

The volume of the Indian other specialty oil market is estimated at 4,644 KT and valued at \$6.72 billion as of 2023. The market is anticipated to clock a five-year CAGR of 4.4% (by value) to reach \$8.35 billion by 2028. Further, the volumetric size of the market is foreseen at 5,653 KT by 2028, at a five-year CAGR of 4.0%.

The demand for other specialty oils market in India is driven by growth in sales of passenger cars and two-wheelers, increase in power demand, and the government's emphasis on improving the infra for power

transmission and distribution, rising industrialisation and domestic manufacturing, placing rising number of machines in use, and increasing tyre demand from growing automotive sectors.

**Figure 54: Indian other specialty oils market growth trajectory**



E: estimated; P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

## Production process

**Table 7: Production process of other specialty oils**

Product type	Production process
<b>Automotive oil</b>	Automotive oil is refined from crude oil, which is heated in enormous fractionating towers after passing through a purification procedure called sedimentation. Vapours, which can be utilised to produce gasoline, wax, or propane, are gathered at various locations throughout the tower. After being filtered, the recovered automobile oil is combined with additives. The engine oil is made up of base oil and additives, with the base oil consisting of mineral base oil and synthetic base oil. The base oil and additives are combined in a specific proportion subject to use.
<b>Transformer oil</b>	Transformer oil, often known as insulating oil, has excellent electrical insulating properties. While mineral oil continues to be the most used base for transformer oil, new formulations with superior engineering or environmental qualities are becoming popular. The current invention relates to the creation of a formulated transformer oil by fractionating a hydrocracker product to produce a distillate boiling in the range of transformer oils, dewaxing the fraction, optionally hydro finishing the fraction, and adding an adequate amount of an antioxidant and/or a pour point depressant to a said fraction. This method produces formulated transformer oil with properties such as formed naphthenic transformer oil. It is mostly made up of Group II + base oils, or their substitutes, and special additions.
<b>Rubber process oil</b>	Rubber process oil is produced when crude oil passes through the distillation process and is obtained during the composition, the chemical reactions, and the isolating materials that are extracted. It is known as raffinate and is compatible with rubber polymers. The primary characteristic is the presence of the double-bonded mix ring carbon structure. Rubber process oils are utilised in a wide range of industries and are offered in several grades and viscosities to suit a range of applications.

Source: CRISIL MI&A Consulting

## End-use segments

Automotive lubricants minimize friction, boost engine longevity, and enhance vehicle performance. Performance improvement is a crucial factor for major automakers as they are required to guarantee seamless manufacturing quality. Transformer oil is utilised to maintain the transformer's smooth performance by reducing heat damage. Additionally, high-voltage circuit breakers and switches also use transformer oil. Industrial lubricants help industrial

machinery and equipment to operate more effectively and efficiently. These are used across a wide range of industries including power generation, metal and mining, food and beverage, and turbine machineries. Rubber process oil is one of the key ingredients in production of various types of rubber. Commercially, rubber is utilised in the production of tyre and many different products, and in a variety of applications. Additionally, it is utilised in polishes, industrial hoses, shoes, and carbon black.

**Table 8: End-use segments of other specialty oils**

Specialty oil	Applications	Forecast
Automotive oil	HCV*	Heavy commercial vehicle (HCV) sales are projected to rise at 7-9% CAGR between fiscals 2023 and 2028 vs ~2.5% CAGR between fiscals 2018 and 2023. Growth drivers are improving industrial activity, steady agricultural output, and the government's focus on infrastructure.
	LCV*	Light commercial vehicle (LCV) demand is expected to rise 8-9% CAGR between fiscals 2023 and 2028, due to higher private consumption, greater availability of redistribution freight and improved finance.
	Passenger vehicles	Passenger vehicle demand is expected to increase at 8.5-9.5% CAGR between fiscals 2023 and 2028, due to improvement in supply because of easing semiconductor shortages. Further, there has been traction in the UV segment due to higher demand, supported by better launches from OEMs.
	Two wheelers	CRISIL MI&A Consulting expects domestic two-wheeler sales to record a CAGR of 3.5-4% between fiscals 2023 and 2028.
Transformer oil	Power transformer	The transformer industry is expected to log 8-9% CAGR between fiscals 2023 and 2025 on a low base to reach \$2.9-3 billion, as against 0.2% CAGR between fiscals 2016 and 2020.
	Transmission & distribution	CRISIL MI&A Consulting expects the transmission tower market to grow at a CAGR of 7-8% from Rs 1.78 billion in fiscal 2022 to \$2.1-2.3 billion in fiscal 2025.
	Power	Power demand grew 6.3% in fiscal 2023 and is likely to post healthy 6-6.5% growth in fiscal 2024. Power demand is projected to clock a CAGR of 5-5.5% between fiscals 2023 and 2028, supported by economic growth recovery and improved reach and reliability of power supply.
	Railway	The National Rail Plan has laid out a roadmap for the railway network's capacity development by 2030 to accommodate growth until 2050. It calls for the development of a railway network that is prepared for the future and capable of meeting both passenger demand and increasing the modal share of railroads in freight from 26-27% to 40-45%.
Industrial oil	Heavy construction equipment	The construction equipment sector is projected to grow 10-15% in fiscal 2023, driven by growth in end-user industries.
	Manufacturing	By 2030, India is likely to contribute more than \$500 billion yearly to the global economy and become a major centre for manufacturing.
	Oil & gas	Between fiscals 2023 and 2028, domestic natural gas production is projected to rise at 7-8% CAGR to 126-131 mmscmd. The government's steps to attract investments and raise production are expected to expedite the development of fields.
Rubber process oil	Tyre	Tyre demand is projected to increase at 7-9% CAGR between fiscals 2023 and 2028. CRISIL MI&A Consulting expects tyre demand from OEMs to grow 9-11% on-year (tonnage terms) in fiscal 2024, led by the CV segment. Demand from the replacement market is expected to grow 8-9% yoy (tonnage) in fiscal 2023, owing to the economic

Specialty oil	Applications	Forecast
		revival, improving industrial activity, steady agricultural output, and the government's focus on infrastructure, mining, and road construction.
	Footwear	India is the world second largest footwear producer and consumer after China. India contributes 10.7% to global footwear production and 11.7% by consumption. The Indian footwear industry to generate revenue of Rs 2,039 billion by 2023 with an approx. annual growth of ~5% during 2023-2028. Furthermore, by volume footwear market is expected to reach 2,2 billion pair by 2028.

\*HCV: Heavy Commercial Vehicles

LCV: Light Commercial Vehicles

Source: CRISIL MI&A Consulting

### Competitive landscape

There are many players in this segment. The segment is characterized by the presence of public sector oil marketing companies (OMCs) such as Indian Oil, Hindustan Petroleum and Bharat Petroleum. Key multinational companies include Castrol India, Shell, Total Energies, and Valvoline; while the prominent Indian companies are Gandhar Oil, Raj Petro, Apar Industries, Savita Oil, and Gulf Oil.



## 7 Pricing analysis for Base Oil

### Prices of base oil are index-linked and move with a time lag of 30-45 days

Crude oil pricing is one of the primary factors that drive base oil pricing, but prices of base oil (a key raw material for lubricant makers) reflect crude oil prices with a lag of one to two months.

### Base oil constitutes 60-90% of specialty oil formulation by volume, and hence plays a critical role in its pricing

Base oil, commonly used as specialty oil base stock, is the refined petroleum mineral or synthetic material created by a refinery to a particular set of requirements. High-viscosity material from vacuum gasoil or vacuum residue distillation cuttings is extracted and processed to create base oils. As base oil typically constitutes 60-90% of specialty oil formulations by volume, it defines the grade of formulations. The kind of base oil used for refining and/or the process of base oil manufacture might affect the quality of specialty oil products.

### Base oil prices are influenced by supply-demand imbalance at the global level

#### Pandemic-driven lockdown led to sharp drop in prices in 2020

The Covid-19 pandemic-induced lockdowns triggered a sudden and widespread slump in base oil demand. This put more pressure on Group II producers because of the large volumes of supply that usually move to base oil import giants India and China.

#### Gradual recovery in prices in 2021, with relaxation of lockdown and end-use demand recovery

Prices spiked in the first half of 2021, as the industry began trade and supply could not keep up with demand due to price instability brought on by the pandemic's second wave. Due to a regional supply constraint, the market saw strong demand for base oil from downstream firms. Due to the exceptional demand in the Chinese market, there was a shortage of base oil, which drove up the price of base oil there. Sinopec intended for its Base Oil Group II plant in Beijing to begin operations in July 2021 to address the protracted supply constraint in China. Amid limited supply and high demand, the base oil market reported a solid price increase in the first quarter of 2021; Grade I and II prices rose to \$1,423 per tonne and \$1,327 per tonne, respectively, in June 2021.

#### Russia-Ukraine conflict led to price surge in 2022

The Russian-Ukraine war led to increase in crude price to \$112/ barrel in March 2022 from \$74 /barrel in December 2021. Prices increased further to \$111/ barrel in May 2022, due to the deterioration of the geopolitical situation in Europe. Base oil prices exhibited a similar trend, and Grade I and II prices rose to \$1,837 per tonne and \$1,762 per tonne, respectively.

### Base oil prices are expected to be in range bound in the short term driven by geopolitical uncertainties

Russia is already under sanctions and possibly staring at further sanctions as the US and Europe discuss ban on Russian imports. It also put upward pressure on base oil quotations throughout northeast Asia-Pacific. However, such sanctions could have a wider impact on energy supply as well as prices of alternates such as gas and coal. This has already increased the volatility in oil prices. Concerns have also been raised about the widening gap between supply and demand after the world economy opened and began to normalize after the omicron wave.

In April 2023, Crude oil price increased ~7.1% m-o-m and decreased 20.5% y-o-y. Rise in price to \$84.1 per barrel in April 2023 from \$78.5 in March 2023 was primarily due to announcements of production cuts by OPEC+ leading to moderation global supply. Sharp production cuts resulted in supply pressures pushing crude oil prices northwards during the month. Whereas the aggressive interest rate hikes by major central banks sparked fears of a global economic slowdown that is expected to impact overall demand. Indeed, on the supply front, failure to achieve a ceasefire in Ukraine along with resurgence in the conflict have heightened volatility in crude prices. In

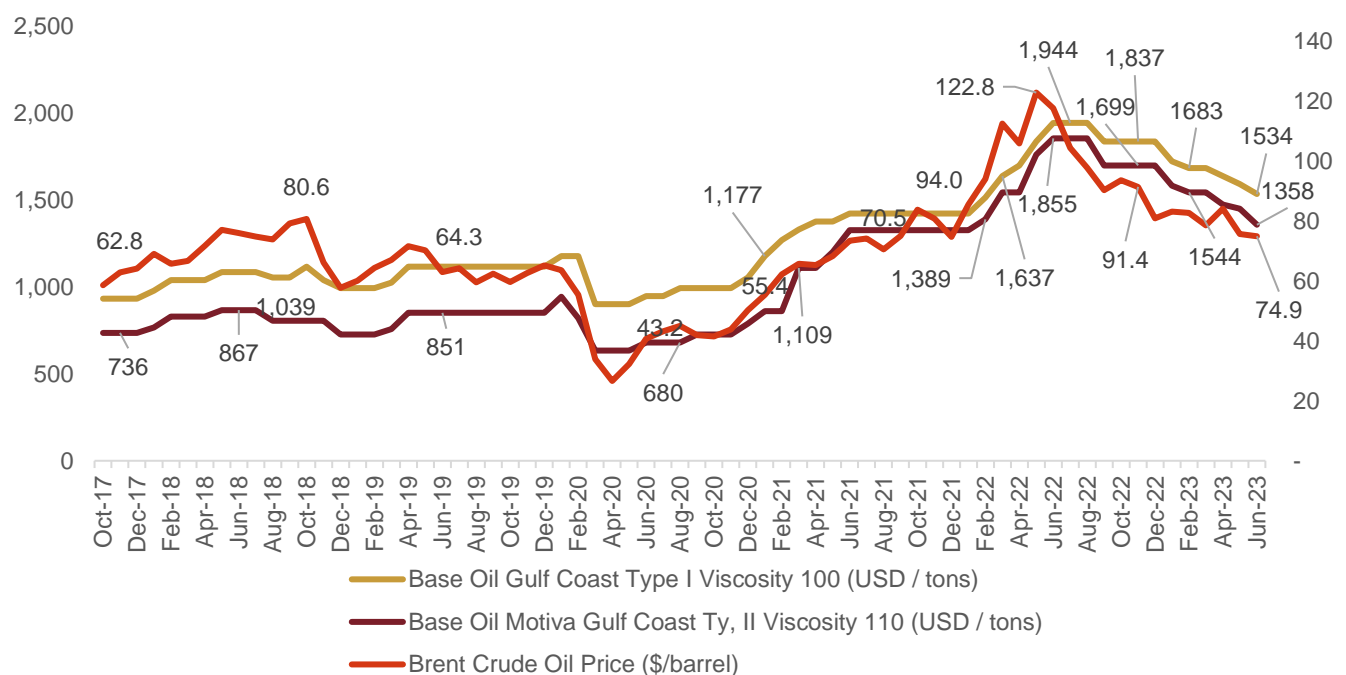


fact, the ban on Russian crude oil by end-2022 is expected to create a structural shift in the oil basket globally. Any such sanctions could have a wider impact on energy supply as well as prices of alternative fuels such as natural gas and coal. This has already increased the volatility in crude prices.

Further, the OPEC's decision to reduce crude oil production, the largest production cut since the pandemic, is expected to be the most influential factor supporting the rise in prices. CRISIL MI&A Consulting expects the Brent crude oil price to be at \$80-82 per barrel in 2023, in line with the price rise globally owing to tighter oil supplies

The prices of base oil Group I and II were \$1,534 per tonne and \$1,358 per tonne, respectively, in June 2023. The base oil price is expected to remain range bound in the short term driven by the geopolitical uncertainties.

**Figure 55: Base oil prices vs crude oil price movement**



Source: CRISIL MI&A Consulting

## 8 Barriers to entry

The specialty oil business is capital intensive in nature, and involves inherent complexities in terms of technology, hazards management and regulations. Technical expertise and operational track record also matter. Such barriers are particularly important for white oil as the end-products are mostly used for human consumption. The types of entry barriers are detailed below.

### Empanelment with consumer and pharma manufacturers

Large, marquee global manufacturers across applications such as pharma, food and beverage, and cosmetics have extensive supplier accreditation and internal approval processes that need to be followed by manufacturers of specialty oils. These include provision of service, safety and performance histories, product trials, plant audits, financial capability, experience, and certifications to be registered, eligible, and approved to conduct business and provide services. The overall time for empanelment of suppliers with marquee manufacturers can take up to 4–5 years. Further, the costs associated with changing suppliers of such products are relatively high, consequently disincentivizing any such change. Customers typically select suppliers after a process of acute review and tend to develop long-term relationships with a limited number of suppliers.

### High quality requirements

Specialty oil manufacturers need to adhere to the highest standards of quality. They need to exercise prevention-based quality control checks and undertake checks at multiple stages, including on receipt of raw material, work in progress products and on finished products, at their laboratories and in certain cases at recognized third party laboratories, prior to it being packed to ensure that no defective products are delivered to customers. Defective products, if any, are reprocessed to comply with customer requirements. Internal systems need to be established to take corrective and preventive actions in case of non-adherence to the set quality standards.

### Strong brand presence

Suppliers having a strong brand presence enjoy brand loyalty, which attracts customers back to the company. New entrants need to invest heavily to match years of advertising and user experience. Marquee manufacturers across consumer and pharma prefer to procure products from reputed specialty oil manufacturers.

### Supply assurance

The end use market is volume-driven since users in industries such as food and beverage, pharmaceuticals, and beauty and personal care are all consumption-driven. In the medium to long term, leading end-user businesses need to be assured of an uninterrupted supply. Hence, there is preference for manufacturers with large and multiple facilities to reduce the threat of supply disruption.

### Long-term relationship

Leading consumer and pharma manufacturers prefer long-term relationship with established suppliers of specialty oils as spot purchases from distributors are cost inefficient and lead to erosion in margins. Relationship with established suppliers ensure an assured supply with favourable prices, which is critical for long-term viability of the business.

### Strong supply chain

Specialty oil manufacturers need to have either their own extensive distribution network or access to existing distribution channels for supply of products to customers in an efficient manner. The company's geographic reach and lead time depend on the strength of its supply chain network.

### Regulatory requirements

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White mineral oils should be highly refined, of the highest quality and ultra-pure before they can be utilized in the production of personal and healthcare products. Given that white oil is applied directly or indirectly to the body, the raw materials used for such products should comply with all applicable national and international standards. Non-compliance could harm the end-user. This may result in deterioration of brand image and legal complications including monetary/ non-monetary penalty. Specialty oil manufacturers of white oil need to comply with standards such as India FDA, ISO certifications, kosher, and halal. The kosher and halal certifications ensure that white oils are safe for use in foods and dietary supplements.

## 9 Customer contracts

### **Specialty oil manufacturers typically have short-term contracts with customers**

In specialty oil contracts, the pricing mechanism depends on various factors such as raw material price (base oil and additive price), duration of the contract, market conditions, and commodity price outlook. An increase in the price of raw materials raises the final selling price in the contract and vice versa.

Prices vary among manufacturers depending on the product type and final application. In a customer contract, both manufacturer and customer set a formula based on pricing data for base oil and additive rates that are monitored on a quarterly basis, and any price increase is passed on to the customer accordingly. Specialty oil manufacturers have pass-through contracts in place for minimizing risk in case of certain supply orders.

Manufacturers usually focus on short-term customer contracts that can range 1-2 years. Long-term contracts form a small portion of the order book. Since formula prices are always backward-looking, the prices of long-term buy contracts require time to adjust if crude price variations occur. Specialty oil manufacturers are vulnerable to fluctuations in raw material costs and currency exchange rates. To mitigate risks from fluctuations of raw material prices, manufacturers adopt prudent inventory control and hedging techniques to reduce risks. Other measures include rigorous credit restrictions to reduce exposure to clients who have cash flow problems.

Customers have the right to end a contract with a manufacturer owing to a change in preference or for any other reason with only a short notice because manufacturers typically have short-term contracts, which could materially impact business operations. As a result, manufacturers' revenues may be affected due to changes in the market for the products. Several factors such as the ability to price the products competitively, customer happiness, shift in demand, and customers' inventory management have an impact on client orders. Although manufacturers place great value on product quality, fast delivery and close customer contact, any change in consumers' purchasing habits can adversely impact the business.

## 10 Gandhar Oil Refinery India Ltd.'s positioning

Gandhar Oil Refinery India Ltd is one of the leaders in the domestic specialty oils space, and a well-known company in white oil, which is the fastest growing segment in specialty oils. The company has gradually built competency via expansion of its capacity and establishing a presence across the value chain, and diversifying its product portfolio, customer, and supplier base, as well as geographical footprint. Gandhar has a diversified business portfolio with Personal Care, Health Care and Performance Oils (PHPO) as the primary business segment.

Currently, it supplies 350+ specialty oil products, has geographically diversified manufacturing facilities in three locations (i) Taloja, Maharashtra, (ii) the Union Territory of Silvassa, Dadra and Nagar Haveli and Daman and Diu and (iii) Sharjah, United Arab Emirates. Gandhar Oil is an accredited supplier and has strong customer relationships and serves prominent customers such as Hindustan Unilever (HUL), Procter & Gamble (P&G) and Emami in the domestic and international markets across key industries, and sources raw materials from global suppliers such as SK Lubricants, S-Oil Corporation, GS Caltex, and Indian OMC's. It has also established credibility in terms of efficient operational, stakeholder and supply chain risk management.

The company is the leading manufacturer of white oil by revenue, with a growing focus on the consumer and healthcare end-user industries. Below is a summary of the business segments and end-industries served by the company:

**Table 9: Gandhar Oil's business segment**

Business segment	End industries
Personal Care, Health Care and Performance Oils (PHPO)	Consumer, healthcare, plastics, chemical, textile and fragrance industries
Lubricants	Automobile service stations, industrial machines, and equipment
Process and Insulating Oils (PIO)	Transformer manufacturers, power generation and distribution industry, and tyre and rubber product manufacturers

Source: Company annual reports

### 10.1 Gandhar Oil's market position

Gandhar Oil's comprehensive and diversified product portfolio and service offerings enable the company to insulate its revenue growth from risks associated with product or customer concentration.

In fiscal 2023, the revenue of Gandhar from the white oil product accounted 63.7% of consolidated manufacturing sales. Gandhar Oil is among the top 2 manufacturers in the Indian white oil market; considering only domestic sales, the company has a market share of 26.5% in India. The company is also India's largest manufacturer of white oil by revenue in fiscal 2023, including both domestic and overseas sales. Globally as well, Gandhar Oil is one of the top five players, with ~9.6% market share in white oil in 2022. Due to diverse portfolio, Gandhar has a diversified clientele and therefore are not significantly dependent on a few customers for the success of the business. In the past two years, Gandhar has grown significantly higher than the growth rate of specialty oil industry. Gandhar also sources from best in-class suppliers to ensure high-quality product.

**Table 10: Gandhar Oil's market positioning in India and globally (fiscal 2023)**

S. no	Products	Consolidated manufacturing sales (Rs cr) (A)	Domestic sales (Rs cr) (B)	India market size (Rs cr) (C)	Company's market share – India (B/C)	Global market size (Rs cr) (D)	Company's market share globally (A/D)
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1	White oil/ paraffin/ mineral oil	2,432	903	3,408	26.5%	25,350	9.6%
2	Petroleum jelly/wax	275	63	1,040	6.1%	5,784	4.8%
3	Automotive oil	312	112	24,409	0.5%	3,98,204	0.1%
4	Industrial oil	390	311	24,059	1.3%	4,85,320	0.1%
5	Transformer oil	273	252	1,389	18.2%	27,825	1.0%
6	Rubber processing oil	136	133	900	14.7%	17,586	0.8%
	<b>Total sales</b>	<b>3,818</b>	<b>1,775</b>	<b>55,205</b>	<b>3.2%</b>	<b>9,60,069</b>	<b>0.4%</b>

Exchange rate: \$1 = Rs 78.6

Note: Gandhar Oil's market share has been calculated based on market size in 2022.

Source: CRISIL MI&A Consulting

## 10.2 Gandhar's positioning in consumer and pharma end-use industries

Gandhar Oil caters to end-use applications such as pharmaceuticals and consumer products, which are also catered to by marquee Indian specialty chemical companies such as Rossari Biotech, Privi Specialty, Fairchem Organics, and Galaxy Surfactants.

Gandhar Oil enjoys relatively higher gross profit margins with the pharma and consumer end customers as compared to customers from other industries such as industrial goods, auto, power, rubber, and textiles. End-user customers in the pharma and consumer industries enjoy relatively higher average profit margins as compared to other industries such as industrial goods, auto, power, rubber, and textiles. The end use - industries such as pharmaceuticals and consumer products are expected to grow strongly going forward driven by strong domestic consumption, favorable demographics, and government initiatives.

Similar to the aforementioned specialty chemical companies, Gandhar is strongly positioned in the consumer and pharmaceutical industries, with its marquee consumer and pharmaceutical clientele including Unilever, Procter & Gamble ("P&G"), Marico, Emami, Dabur, and Bajaj Consumer Care. Also, since the underlying growth drivers of end-use industries remain the same, Gandhar can be compared with these specialty chemical companies given its focus on the same end industries and its access to marquee customers.

**Table 11: India's consumer products and pharmaceutical industries are expected to grow.**

Application segments	Growth (FY23-FY28)	Key growth drivers
Consumer products (Food & personal care)	11%	<ul style="list-style-type: none"> <li>Consumer food segment to be driven by strong rural demand, favorable population demographics, rising incomes and rapid urbanization, the transition to premium, nutritious and healthy foods</li> <li>Changing lifestyle, increased personal grooming, personal hygiene and care are key customer trends driving growth of cosmetic and personal care industry</li> <li>Rising income would result in around 73 million households moving into the middle-class category in India over the next 10 years, thereby enhancing their purchasing power</li> <li>Enhanced distribution reach through changing retail landscape with rapidly growing modern retail shops (supermarkets and hypermarkets) in urban areas, owing to consumers increasingly preferring to buy 'all under one roof', are expected to drive demand.</li> </ul>

		<ul style="list-style-type: none"> <li>Government has rolled out PLI scheme for food processing in 2021 with an outlay of INR 10,900 crores to boost exports and ensure availability of wider range of value-added products for consumers</li> </ul>
Pharmaceuticals	12.6%	<ul style="list-style-type: none"> <li>Government initiatives such as Production Linked Incentive (PLI) Scheme for promotion of domestic manufacturing of identified critical KSMs/Drug Intermediates and API and scheme for promotion of bulk drug pharma parks would aid investment in the sector</li> <li>Launch of National Digital Health Mission in 2020 - to increase access to digital healthcare and ensure accountability via health ID card - health ID, telemedicine, ePharmacy, healthcare registry and personal digital health record</li> <li>Patient pool expected to increase over 20% in the next 10 years, given population growth and lifestyle changes and the share of senior citizens in India's population will double from 8.6% in 2011 to 16% by 2041</li> <li>In the hospital segment, the expansion of private healthcare players to Tier 2 and Tier 3 locations, beyond metropolitan cities to drive growth</li> <li>Indian companies are expected to continue investing in R&amp;D as they focus on developing niche and complex products. Transition to customized synthesis to support growth over medium term</li> <li>New product launches, complex generics, specialty drugs to drive formulation exports growth over next five years -(FY23-FY28)</li> <li>India's pharma exports to semi-regulated markets (Asia pacific, Latin America, Eastern Europe, Africa, and Gulf countries) to demonstrate strong growth over the next five years, as players eye growth opportunities in newer markets with low generic penetration and newer launches in the existing markets</li> <li>Recurring quality and supply disruptions from China, India will have the opportunity to establish and strengthen its strong footing on the global market as global customers (following Covid pandemic) adopting China+1 sourcing policy to secure their supply chains and reduce dependence on China</li> </ul>

Source: CRISIL MI&A Consulting

## 11 Peer comparison

CRISIL MI&A Consulting has compiled profiles of key players in the specialty oil and specialty chemicals industry in India. Information in this section is sourced from company websites, including annual reports and investor presentations, regulatory filings, rating rationales, and/or product brochures. The competitive landscape has been established based on player operations in India, comparable operating revenue, and financial data availability for players.

### 11.1 Operational benchmarking

Table 12: Operational comparison with peers

Company	Established	Products	End Industries	Select key clients	% Exports (by value)
Gandhar Oil Refinery India Ltd.	1992	White oils, Petroleum jelly, Transformer oil, rubber process oil, Industrial oil, and Automotive oil	Consumer, healthcare, pharma, industrial machines and equipment, automobile	Unilever, P&G, Marico, Emami, Dabur, Bajaj Consumer Care, Amrutanjan	53% (FY2023)
<b>A. Consumer &amp; pharma focused specialty chemical peers</b>					
Galaxy Surfactants Ltd.	1986	Surfactants	Personal and home care	Includes marquee FMCG companies (L'OREAL, Procter & Gamble, Reckitt Benckiser & others)	46% (FY 2023)
Rossari Biotech Ltd.	2003	Textile chemicals, home & personal care, and performance chemicals, animal feed	Soaps, detergents, paints, coatings, textile, personal care, poultry, pet care	HUL, Panasonic India, RSPL Ltd, IFB Industries Ltd. and Millennium Papers.	13% (FY2023)
Privi Specialty Chemicals Ltd.	1985	Aroma chemicals	Pharma, Cosmetics, Food, FMCG, Fragrance	FMCG companies (Unilever, P&G, Henkel, Reckitt Benckiser & others)	74% (FY2023)
Fairchem Organics Ltd.	2019	Oleo chemicals and nutraceuticals	Paints & Inks, soaps, animal feed, polyamides, cosmetics, textiles, heating fuel, FMCG, pharma	Asian Paints, Uniform Synthesis, Resins & Plastics Ltd., Resinova Chemie Ltd., & others	~2%* (FY2022)
<b>B. Specialty oil peers</b>					
Savita Oil Technologies Ltd.	1961	Transformer oils, white oils & liquid paraffins, cable filling & optic fibre compounds, oxidized waxes & wax emulsions, auto and industrial lubricants	Power, auto, FMCG, polymers, plastics, industrial, pharmaceutical, refrigeration, agriculture, thermoplastic rubbers	Leading auto OEMs (Mahindra & Mahindra, Swaraj Tractors, Tata Motors, and others)	~20%* (FY2022)
Apar Industries Ltd.	1958	Cable compounds, transformer oils, white oils, petroleum jelly, auto and industrial lubricants	Power, FMCG, auto, industrial pharmaceutical, solar, wind	PGCIL, KEC International Limited, Larsen & Toubro Limited, and Kalpataru Power Transmission Limited.	47% (FY2023)



Panama Petrochem Ltd.	1982	Transformer oils, white oils, petroleum jelly, waxes, auto and industrial lubricants, rubber process oil, drilling fluids and greases	Power, FMCG, auto, pharmaceutical, industrial	Hubergroup India Pvt. Ltd (for Inks), Reliance Industries Ltd., Dabur (for cosmetics) and ATC Tyre (for rubber oils)	40% (FY2023)
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Source: Company annual reports, CRISIL MI&A Consulting

\* Data not available for FY23

### Gandhar Oil's positioning

Gandhar Oil is well positioned compared to specialty oil players due to its higher exposure to the high-growth white oil market, its focus on the high-margin consumer and healthcare end-use segments, and its robust export profile amongst specialty oil peers.

Gandhar is well positioned to compete with specialty chemical players operating in the same end industry of consumer and healthcare with well-established long-standing relationship with marquee clientele.

## 11.2 Financial benchmarking

Table 13: Financials for fiscal 2023 (Specialty oil companies)

Metric/company	Units	Gandhar Oil	Savita Oil	Apar Industries	Panama Petrochem
Revenue from operations	Rs million	40,794.4	36,304.4	143,521.5	22,487.2
Revenue CAGR (FY21-FY23)	%	40.6	34.7	49.9	24.7
EBITDA	Rs million	3,166.2	3,345.9	12,269.5	3,089.7
EBITDA CAGR (FY21-FY23)	%	12.9	3.7	71.1	45.7
EBITDA margin	%	7.8	9.2	8.5	13.7
PAT	Rs million	2,131.7	2,257	6,377.2	2,329.7
PAT CAGR (FY21-FY23)	%	15.0	-2.5	99.3	31.2
PAT margin	%	5.2	6.2	4.4	10.4
Gross margin	%	12.8	19.4	25.4	21.8
ROE	%	32.3	16.7	32.3	27.1
ROCE	%	41.2	23.0	49.6	34.4
Working capital cycle	No. of days	31	70	15	64
Net debt	Rs million	1,226.8	-509.5	-1,946.5	-965.3
Net debt-to-equity	Times	0.2	NA	NA	NA
Net debt-to-EBITDA	Times	0.4	NA	NA	NA

<b>Gross fixed asset turnover<sup>1</sup></b>	Times	17.4	-	10.8	-
<b>Manufacturing gross margin spread**</b>	Rs/KL	11,429.6	-	-	-

Note: Consolidated financial data in Rs million

\*Apar Industries' revenue break-up: Transformer and specialty oil (25.1%), conductors and cables (68.4%), and Lubricants (Auto and Industrial) (5.9%)

Gross fixed asset turnover has been calculated on the basis of revenue from manufacturing except for Savita due to unavailability of data.

\*\* Manufacturing gross margin spread is available only for Gandhar Oil but not for peers due to the non-availability of volume data. Source: CRISIL MI&A Consulting

## Specialty

Table 14: Financials for fiscal 2022 (Specialty oil companies)

Metric/Company	Units	Gandhar Oil	Savita Oil	Apar Industries	Panama Petrochem
Revenue from operations	Rs million	33,891.3	29,382.2	93,165.7	21,323.5
EBITDA	Rs million	2,674.8	3,580.5	5,478.5	2,960.0
EBITDA margin	%	7.9	12.2	5.9	13.9
PAT	Rs million	1,842.9	2,604.9	2,567.3	2,303.4
PAT margin	%	5.4	8.9	2.8	10.8
Gross margin	%	13.5	22.7	22.6	22.2
ROE	%	39.4	22.5	16.4	34.7
ROCE	%	47.0	28.7	24.1	42.6
Working capital cycle	No. of days	22	72	19	63
Net debt	Rs million	984.8	-600.7	-3.1	-320.7
Net debt-to-equity	Times	0.2	NA	NA	NA
Net debt-to-EBITDA	Times	0.4	NA	NA	NA
Gross fixed asset turnover	Times	13.6	8.3	7.4	9.6
Manufacturing gross margin spread	Rs/KL	9,735.8	-	-	-

Note: Consolidated financial data in Rs million

\*Savita Oil's revenue break-up: petroleum products (98.4%), wind power (1.1%), and other unallocated (0.5%)

\*Apar Industries' revenue break-up: Transformer and specialty oil (36%), conductors and cables (63%), and thermoplastic elastomers (1%)

<sup>1</sup> Gross Fixed asset details are not available for Savita Oil and Panama Industries.

\*Panama Petrochem: Cosmetics and pharma (24%), rubber process oil (21%), printing Ink (20%), knitting and antistatic coning oil (19%), transformer oil (7%), and other (9%). Others include drilling fluids and industrial oils and lubricants

Gross fixed asset turnover has been calculated on the basis of revenue from manufacturing except for Savita due to unavailability of data.

\*\* Manufacturing gross margin spread is available only for Gandhar Oil but not for peers due to the non-availability of volume data.

Source: CRISIL MI&A Consulting

**Table 15: Financials for fiscal 2021 (Specialty oil companies)**

Metric/Company	Units	Gandhar Oil	Savita Oil	Apar Industries	Panama Petrochem
Revenue from operations	Rs million	20,638.6	20,012.0	63,880.2	14,469.6
EBITDA	Rs million	2,485.6	3,112.3	4,191.4	1,897.5
EBITDA margin	%	12.0	15.6	6.6	13.1
PAT	Rs million	1,611.4	2,372.0	1,605.0	1,353.5
PAT margin	%	7.8	11.9	2.5	9.4
Gross margin	%	18.4	29.9	24.9	22.6
ROE	%	53.2	24.6	12.5	27.2
ROCE	%	61.2	29.7	20.9	36.0
Working capital cycle	No. of days	19	98	22	77
Net debt	Rs million	1,654.9	-644.1	571.5	-52.6
Net debt-to-equity	Times	0.4	NA	0.0	NA
Net debt-to-EBITDA	Times	0.7	NA	0.1	NA
Gross fixed asset turnover	Times	8.4	6.1	5.5	7.6
Manufacturing gross margin spread	Rs/KL	10,977.1	-	-	-

Note: Consolidated financial data in Rs million

Source: CRISIL MI&A Consulting

**Table 16: Financials for fiscal 2023 (Specialty chemicals companies)**

Metric/company	Units	Gandhar Oil	Galaxy Surfactants	Rossari Biotech	Privi Specialty	Fairchem Organics
Revenue from operations	Rs million	40,794.4	44,452.4	16,558.8	16,078.2	6,480.4
Revenue CAGR (FY21-FY23)	%	40.6	26.4	52.8	12.2	27.8
EBITDA	Rs million	3,166.2	5,682.8	2,230.2	1,859.2	723.3

<b>EBITDA CAGR (FY21-FY23)</b>	%	12.9	12.5	34.4	-5.4	2.5
<b>EBITDA margin</b>	%	7.8	12.8	13.5	11.6	11.2
<b>PAT</b>	Rs million	2131.7	3,809.8	1,072.6	212.8	435.0
<b>PAT CAGR (FY21-FY23)</b>	%	15.0	12.3	15.8	-57.3	1.2
<b>PAT margin</b>	%	5.2	8.6	6.5	1.3	6.7
<b>Gross margin</b>	%	12.8	30.3	29.3	40.2	24.3
<b>ROE</b>	%	32.3	22.0	12.5	2.6	17.7
<b>ROCE</b>	%	41.2	25.6	16.1	6.1	24.1
<b>Working capital cycle</b>	No. of days	31	68	73	156	72
<b>Net debt</b>	Rs million	1,226.8	399.3	41	10,401	501.6
<b>Net debt-to-equity</b>	Times	0.2	0.0	0.0	1.2	0.2
<b>Net debt-to-EBITDA</b>	times	0.4	0.1	0.0	5.6	0.7
<b>Gross fixed asset turnover</b>	times	17.4	3.3	4.3	1.3	3.6

Note: Consolidated financial data in Rs million

Source: CRISIL MI&A Consulting

**Table 17: Financials for fiscal 2022 (Specialty chemicals companies)**

<b>Metric/company</b>	<b>Units</b>	<b>Gandhar Oil</b>	<b>Galaxy Surfactants</b>	<b>Rossari Biotech</b>	<b>Privi Specialty</b>	<b>Fairchem Organics</b>
<b>Revenue from operations</b>	Rs million	33,891.3	36,857.1	14,829.7	14,037.2	6,431.8
<b>EBITDA</b>	Rs million	2,674.8	4,007.1	1,834.4	1,938.4	1,048.7
<b>EBITDA margin</b>	%	7.9	10.9	12.4	13.8	16.3
<b>PAT</b>	Rs million	1,842.9	2,627.8	977	973.8	679.1
<b>PAT margin</b>	%	5.4	7.1	6.6	6.9	10.6
<b>Gross margin</b>	%	13.5	29.8	25.5	40.8	28.7
<b>ROE</b>	%	39.4	18.3	16.1	12.6	33.9
<b>ROCE</b>	%	47	20.8	19.7	10.2	42.1
<b>Working capital cycle</b>	No. of days	22	67	51	129	58
<b>Net debt</b>	Rs million	984.8	3,021.9	-290.5	8,774.9	620.2
<b>Net debt-to-equity</b>	times	0.2	0.2	NA	1.1	0.3

<b>Net debt-to-EBITDA</b>	times	0.4	0.8	NA	4.5	0.6
<b>Gross fixed asset turnover</b>	times	13.6	3.1	5.0	1.4	4.0

Note: Consolidated financial data in Rs million

Source: CRISIL MI&A Consulting

**Table 18: Financials for fiscal 2021 (Specialty chemicals companies)**

Metric/Company	Units	Gandhar Oil	Galaxy Surfactants	Rossari Biotech	Privi Specialty	Fairchem Organics
<b>Revenue from operations</b>	Rs million	20,638.6	27,840.6	7,093.5	12,765.6	3,965.7
<b>EBITDA</b>	Rs million	2,485.6	4,488.3	1,235.4	2,075.8	688.3
<b>EBITDA margin</b>	%	12.0	16.1	17.4	16.3	17.4
<b>PAT</b>	Rs million	1,611.4	3,021.4	800.5	1,169.0	424.8
<b>PAT margin</b>	%	7.8	10.9	11.3	9.2	10.7
<b>Gross margin</b>	%	18.4	36.3	34.8	41.2	32.7
<b>ROE</b>	%	53.2	25.5	23.0	17.5	28.8
<b>ROCE</b>	%	61.2	28.1	27.4	14.0	34.2
<b>Working capital cycle</b>	No. of days	19	66	42	118	68
<b>Net debt</b>	Rs million	1,654.9	1865.2	-152.1	5,165.0	567.8
<b>Net debt-to-equity</b>	times	0.4	0.1	NA	0.7	0.3
<b>Net debt-to-EBITDA</b>	times	0.7	0.4	NA	2.5	0.8
<b>Gross fixed asset turnover</b>	times	8.4	2.4	4.5	1.5	2.7

Note: Consolidated financial data in Rs million

Source: CRISIL MI&A Consulting

**Formulas used:**

EBITDA = PBT+ D&A + Finance costs – Other Income

Net debt = Long-term borrowing + short-term borrowing – Cash and cash equivalents

EBITDA margin (%) = EBITDA/ Revenue from operations

PAT margin (%) = PAT/ Total Income

RoE = PAT/ Average Shareholders' equity (Net worth)

Gross margin= (Revenue from operation-Cost of goods sold)/revenue from operation

$\text{RoCE} = \text{EBIT} / \text{Average Capital employed}$

$\text{Capital employed} = \text{Total shareholders' equity} + \text{Total non-current assets}$

$\text{Working capital days} = \text{Inventory days} + \text{receivable days} - \text{payable days}$

$\text{Inventory days} = \text{Average inventory} * 365 / \text{revenue from operations}$

$\text{Receivable days} = \text{Average trade receivable} * 365 / \text{revenue from operations}$

$\text{Payable days} = \text{Average trade payables} * 365 / \text{revenue from operations}$

$\text{Net debt-equity ratio} = \text{Net debt} / \text{Shareholders equity}$

$\text{Net debt-to EBITDA} = \text{Net debt} / \text{EBITDA}$

$\text{Gross Fixed asset turnover ratio} = \text{Revenue from manufacturing} / \text{Average gross fixed asset in last two fiscal}$

$\text{Manufacturing gross margin spread} = \text{Manufacturing gross profit} / \text{Manufacturing sales volume}$

$\text{Manufacturing gross profit} = \text{Finished goods sold} - \text{Cost of materials consumed} - \text{Changes in inventories of finished goods}$

### **Gandhar Oil's financial positioning**

#### **With Specialty oil companies**

- Revenue from operation grew at 40.6% CAGR from fiscal 2021 to 2023, which is one of the highest amongst the peers
- RoE in fiscal 2023 was ~32.3%, the highest among the peers.
- Cash conversion cycle was very efficient in fiscal 2023 at ~31 days.
- The company exhibited healthy PAT and EBITDA, which have been grown at 15.0% and 12.9% CAGRs, respectively, from fiscal 2021 to fiscal 2023.
- The company has highest gross fixed asset turnover ratio for all the three fiscals amongst its peers
- Gandhar is the largest manufacturer of specialty oils amongst its peers in terms of revenue

#### **With Specialty chemicals companies**

- Revenue from operations increased to Rs 40,794.4 million in fiscal 2023 from Rs 20,638.6 million in fiscal 2021, which was a CAGR of ~40.6%, which is the 2<sup>nd</sup> highest amongst the above considered peers after Rossari biotech.
- PAT rose to Rs 2,131.7 million in fiscal 2023 from Rs 1,611.4 million in fiscal 2021, which was a CAGR of 15.0%, one amongst the highest in the peers.
- EBITDA improved significantly between fiscals 2021 and 2023, from Rs 2,485.6 million to Rs 3,166.2 million, thereby recording the EBITDA growth of 12.9% CAGR
- The Company also recorded the highest return ratios (ROE and ROCE) in fiscal 2023, *amongst its peers*.

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