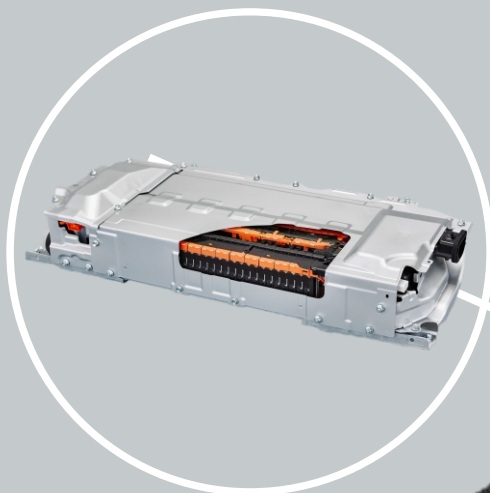


PCBL

‘Play on **C**arbon **B**lack for **L**i-ion batteries’



Aiming to capture a
piece of EV pie

EBITDA/PAT CAGR
expected at 14%/12%
over FY23-26E

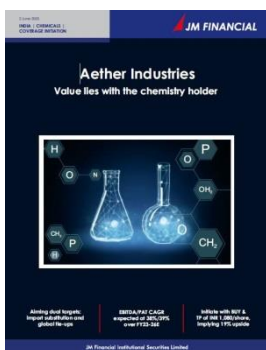
Initiate with BUY &
TP of INR 290/share,
implying 35% upside

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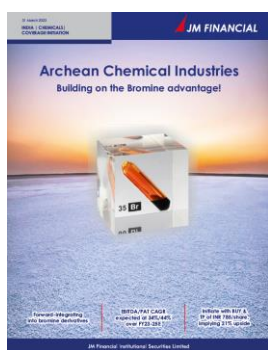


PCBL is well placed to capitalise on several structural tailwinds such as higher feedstock price in China and tight demand-supply situation amid limited capacity additions in ex-Asia regions. Besides this, PCBL is upping the ante in the specialty and performance blacks segment with emphasis on conductive and superconductive grade carbon blacks used in EV batteries. These, when introduced, will help the company change gears towards better profitability. We estimate 14%/12% EBITDA/EPS CAGR over FY23-26E. PCBL's increasing share of specialty blacks, along with the upcoming super conductive carbon black is paving the way for a multiple re-rating from a traditional commodity to a semi-specialty play.

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PCBL

Play on Carbon Black for Li-ion batteries

PCBL is India's largest and the world's 7th largest carbon black company with three major product segments: i) Tyres; ii) Performance blacks, and iii) Specialty blacks. Established in 1960, PCBL has grown to become a leader in the carbon blacks segment; it has entered into non-tyre products through its performance blacks segment and also forayed into specialty blacks (non-tyre and non-rubber) used in plastics, toners, inks and batteries.

Its customers include more than 120+ customers across 50+ countries with 100+ grades of carbon black. PCBL has a capacity of c. 770KTPA spread over its five plants across India, namely Mundra, Palej, Kochi, Durgapur and the new greenfield project in Chennai, with all plants in close proximity to ports. The Palej and Mundra facilities have specialty black manufacturing units while the legacy plant focuses on tyre applications. After all expansions, PCBL will have a total capacity of c.790KTPA, of which 112KTPA will be dedicated to specialty blacks.

We initiate coverage on PCBL with a BUY rating and a Dec'24 TP of INR 290/share (based on DCF implied 18X Dec'25E EPS), implying 35% upside. Key risks: i) highly dependency on tyre and auto sector industry ii) RM volatility, iii) capex ramp-up teething issues, and iv) issues in commercialising super conductive grades.

Close to commercialising Carbon black for Li-ion batteries: PCBL has increased its R&D focus on the specialty and performance blacks segment with emphasis on conductive and superconductive grade carbon blacks used in EV batteries. Carbon black demand for Li-ion batteries is likely to more than quadruple by CY30 (from 20KTPA currently to 84 KTPA in CY30). This, in our view, would be a huge spectrum shift for the company given these grades have 14-15x better realisation compared to the traditional grade. Besides, we believe company could also explore entering into the carbon nanotube (CNT) space which can be used in Silicon/Graphite anodes.

EBITDA/PAT CAGR expected at 14%/12% over FY23-26E: We expect PCBL to register volume CAGR of 12% over FY23-26E especially through the introduction of the Greenfield Chennai facility and the current two specialty black lines in the Mundra facility. We expect PCBL's EBITDA/Kg to improve to INR 18/kg by FY27E from ~11-16/kg over FY20-FY23 as its capacity mix increases towards specialty blacks at 15-16% of overall capacity in FY25/26E. As a result, EBITDA is likely to grow to INR 10.9bn (14% CAGR over FY23-26E) and PAT is likely to reach INR 6.2bn (12% CAGR over FY23-26E).

Initiate with BUY and TP of INR 290 per share: We believe PCBL has structural tailwinds in place including i) elevated feedstock price for Chinese players due to higher use of coal tar towards synthetic graphite for EV batteries, ii) lower availability of coal tar due to shift towards electric arc furnace, and iii) limited capacity additions in developed nations due to higher compliance costs. Further, we believe European sanctions on Russian imports starting Jul'24 would further create an export opportunity for Asian players. We initiate coverage on PCBL with a BUY and a Dec'24 TP of INR 290/share (based on 18X Dec'25E EPS).

Recommendation and Price Target		Financial Summary						(INR mn)
		Y/E March	FY22A	FY23A	FY24E	FY25E	FY26E	
Current Reco	BUY	Net Sales	44,464	57,741	59,487	63,516	67,819	
Current Price Target (12M)	290	Sales Growth (%)	67.2	29.9	3.0	6.8	6.8	
Upside (%)	35%	EBITDA	6,530	7,312	8,833	9,649	10,916	
		EBITDA Margin (%)	14.7	12.7	14.8	15.2	16.1	
		Adjusted Net Profit	4,263	4,422	4,849	5,142	6,170	
		Diluted EPS (INR)	11.3	11.7	12.9	13.6	16.4	
		Diluted EPS Growth (%)	35.8	3.7	9.7	6.1	20.0	
		ROIC (%)	16.9	13.9	13.8	13.3	14.5	
		ROE (%)	18.7	16.2	16.3	15.6	16.8	
		P/E (x)	18.9	18.2	16.6	15.7	13.1	
		P/B (x)	3.1	2.9	2.6	2.3	2.1	
		EV/EBITDA (x)	13.2	12.3	10.3	9.3	8.1	
		Dividend Yield (%)	0.2	2.6	2.4	2.4	2.4	

Source: Company data, JM Financial. Note: Valuations as of 13/Nov/2023

Price Performance			
%	1M	6M	12M
Absolute	5.5	67.8	64.3
Relative*	7.7	60.3	55.9

*To the BSE Sensex

JM Financial Research is also available on: Bloomberg - JMFR <GO>, Thomson Publisher & Reuters, S&P Capital IQ, FactSet & Visible Alpha
You can also access our portal: www.jmflresearch.com
Please see Appendix I at the end of this report for Important Disclosures and Disclaimers and Research Analyst Certification.

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We acknowledge the support of **Prashanth Kamath** in the preparation of this report

Focus charts

Exhibit 1. Carbon Black finds application on cathode materials while the new upcoming CNT technology finds use on both electrodes

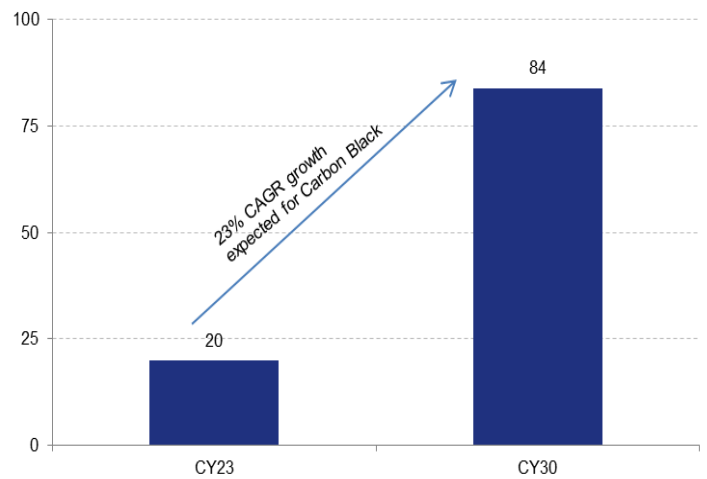
Use	Features	Electrolyte	Cathode materials		Anode materials	
			Active materials	Conductive agent	Active materials	Conductive agent
Stationary Solar battery etc.		Liquid	LFP*1	CB	Graphite	-
Consumer Mobile/PC etc.		Liquid	NCA/Ternary *2	CB	Graphite	-
Automotive	Low cost/ Low capacity	Liquid	LFP	CB	Graphite	-
	High capacity		NCA/Ternary	CNT	Graphite	-
	Super high capacity		NCA/Ternary	CNT	Graphite-SiOx *3	CNT
	All-solid state battery	Solid Sulfide-based	NCA/Ternary	CB/CNT	Graphite	-

*1 : LFP [LiFePO4] A cathode active material with low energy density and low cost
 *2 : NCA [Li (Ni Co Al) O2] / Ternary [Li (Ni Co Mn) O2] A cathode active material with high energy density
 *3 : SiO xAn anode active material with capacity more than four times greater than that of graphite. Its problem is that it expands and contracts significantly during charge and discharge.

First Half of FY2023 Business Briefing

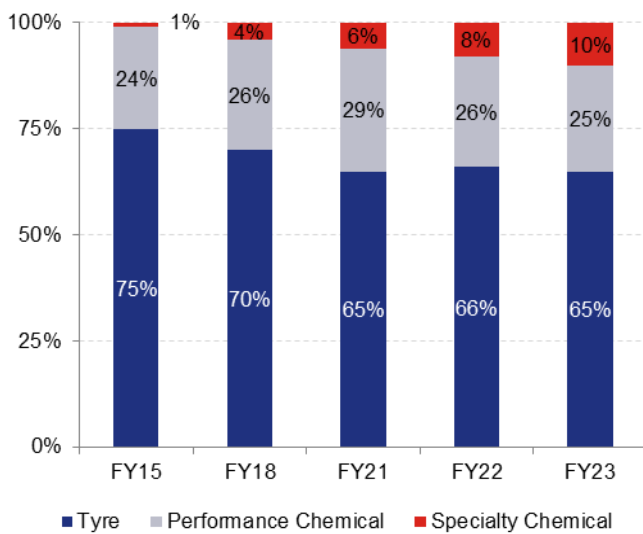
Source: ToYO INKSC, JM Financial

Exhibit 2. Carbon Black use in LiB is set to increase substantially over the next 7 years



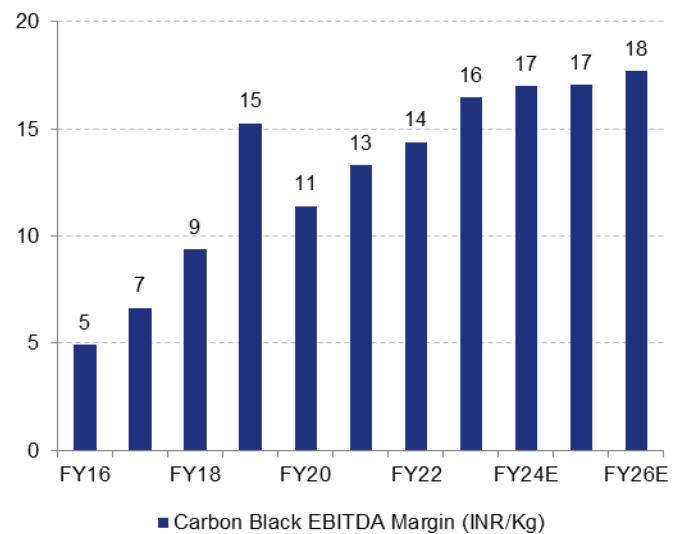
Source: Industry, Orion, JM Financial

Exhibit 3. PCBL's mix has changed over the years gearing towards Performance and Specialty Chemicals



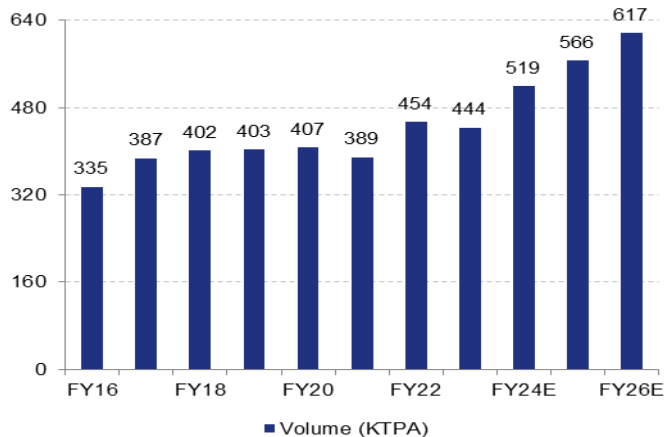
Source: Company, JM Financial

Exhibit 4. Resulting in a clear improvement in PCBL's EBITDA realisation



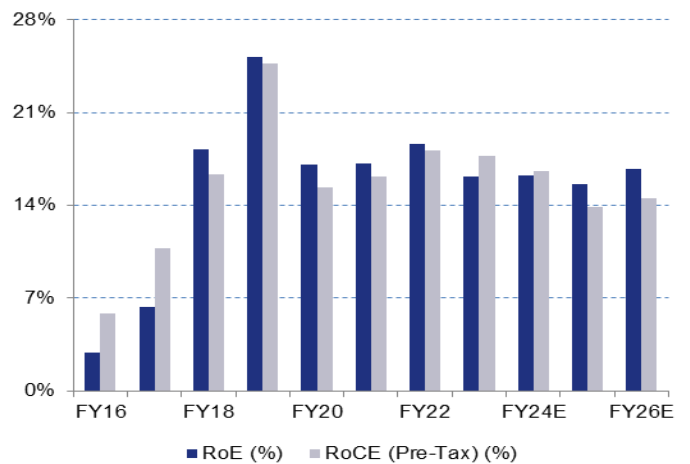
Source: Company, JM Financial

Exhibit 5. Volume growth across segments will lead to higher operating leverage



Source: Company, JM Financial

Exhibit 6. RoCE/RoE(pre-tax) are expected to stabilise at ~15/16%



Source: Company, JM Financial

Investment Thesis

We believe that PCBL is well placed to capitalise on several structural tailwinds: i) Elevated coal tar prices (and, in turn, carbon black oil prices) because of higher use of coal tar towards synthetic graphite manufacturing, ii) Limited capacity expansions in North America and Europe, and iii) Lower production of steel as well a shift from traditional blast furnace steel plants to electric arc furnace steel plants, which will further increase coal tar prices. Also, with around 40% shortage in virgin carbon black in Europe before the war in Ukraine and demand of carbon black set to cross supply in North America, we believe that carbon black players will be competitive exporting to these geographies. Besides this, the company is upping the ante in the specialty and performance blacks segment with emphasis on conductive and superconductive grade carbon blacks used in EV batteries. These, when introduced, will help the company change gears towards better profitability. We also believe that the company could explore entering into the CNT market, like its contemporaries have done, through inorganic expansions. We expect EBITDA/PAT CAGR of 14%/12% over FY23-26 as newer, high-margin products come on stream. We initiate coverage on PCBL with a BUY rating and a Dec'24 TP of INR 290/share (based on 18x Dec'25E EPS). We believe the valuation premium to its Chinese peer (Jiangxi Black Cat Carbon), which is trading at ~13x CY25E EPS, is justified given Chinese players are at a disadvantage due to higher feedstock costs. Moreover, PCBL's increasing share of specialty blacks, along with the upcoming super conductive carbon black is paving the way for a multiple re-rating from a traditional commodity to a semi-specialty play.

- **Entry into advanced specialty black applications a spectrum shift:** We believe that growing proliferation of EVs is an opportunity for PCBL to enter new process technologies for high-end superconductive grade blacks – which have ~15x-20x margins over rubber blacks – that the company is currently testing at its R&D facilities. Currently, as per industry reports, the total market demand for carbon black used in LiBs is 20KT and Orion Chemicals and other industry players expect the total demand to increase to ~84KT by 2030. Another lever for growth will be to enter the CNT (carbon nanotube) industry through an acquisition. CNT is another alternative to carbon black as a conductive agent on both electrodes especially in super high capacity and all-solid state batteries as it increases the capacity of the battery and enhances output and battery life.
- **Change in mix towards specialty products validates our belief that such a shift seems possible:** We believe PCBL's expansion at its Mundra facility by adding 40KTPA of dedicated specialty and performance black capacity (20KTPA of which was already commissioned in 1HFY24), introduction of the Royale Black line of specialty products, and existing battery application and non-battery performance black products makes a shift towards high-value, high-margin products viable. Globally, specialty blacks' gross margins are twice that of rubber blacks with non-rubber specialty blacks applications accounting for 7% of carbon black demand. PCBL's mix too towards performance and specialty blacks has improved from 25% in FY15 to 35% in FY23. This reflects in its EBITDA improvement over the years from ~INR 6/kg in FY15-17 to ~INR 11-16/kg in FY20-23.
- **Structural changes afoot, strong sectoral tailwinds ahead:** Prices of coal tar, a key raw material (RM) for carbon black production, are rising. Of the total coal tar produced globally, roughly 55-56% is used for coal-tar pitch (CTP) production (used in aluminium and graphite production) and ~28% is used in carbon black oil (CBO). We believe that the increasing proliferation of synthetic graphite and the high use of carbon pitch in the same will further skew the usage of coal tar to CTP rather than CBO, blunting to an extent the advantage Chinese players had due to inexpensive and widely available CBO. This, along with lower production of steel as well a shift from traditional blast furnace steel plants to electric arc furnace steel plants will lead to a further increase in coal tar prices.
- **Lack of capacity additions and demand-supply mismatches make PCBL an attractive candidate:** North America and Europe have seen the slowest expansion in carbon black capacities across geographies. With around 40% shortage in virgin carbon black in Europe before the war in Ukraine, and demand for carbon black set to cross supply in North America, we believe that carbon black players will be competitive exporting to

these geographies. With PCBL commenting that the logistics cost of transportation in India and exporting to Europe is relatively equal, and Chinese players facing raw material inflation (RM) because of 1) rising RM cost through coal and 2) shutdown in steel plants and curbs on steel production in China, we believe the export market remains ripe for expansion for PCBL. Of the overall incremental demand of 500,000 tons of carbon black, there is no incremental capacity which has come in globally except in India. We believe that PCBL is extremely well placed to capitalise on the shift of global capacity towards India especially with the introduction of its Greenfield Chennai plant.

- **Tyre proxy play is just half the story for PCBL:** With 20-22% of the weight of a tyre coming from carbon black, assuming the average weight of a tyre to be ~18kg, and global tyre sales of ~2.5bn units in CY22, total carbon black consumption works out to ~10.7MMT. With growing penetration of BEV with expectations of EVs capturing 50% of the auto market by 2030, because of the higher weight of the vehicle resulting in higher torque requirements, there is significant potential for an increase in tyre replacement demand. This makes the company's key business even more attractive.
- **Initiate at BUY with INR 290 target price:** Major expansions in not only PCBL's traditional rubber blacks business but also the addition of specialty lines at Mundra makes us optimistic about the trajectory of PCBL's business journey. We believe these capacity expansions and structural shifts in the revenue mix are precursors to an inflection point in the company. These 'signals in the noise' are not being baked in by the market and, therefore, the company is being valued as such. This gives investors an entry point into a specialty chemicals company at commodity chemicals' multiples. We assume 14% EBITDA CAGR over FY23-26E on account of margin expansion (arising from a change in mix towards specialty and performance blacks, positive operating leverage as utilisation in its existing plants kicks in and introduction of key high conductive and superconductive products). As the company's debt profile improves, we estimate 12% PAT CAGR over FY23-26E. Due to its strategic positioning in its legacy carbon black business, we believe PCBL will be able to enter newer technologies as it leverages its existing technological knowhow to leapfrog into the future. We initiate with a BUY rating with a Dec'24 TP of INR 290/share (based on 18X Dec'25E EPS).

Is the China Advantage of access to cheaper RMs petering out ?

- Growing demand for Graphite increases pressure on Coal Tar prices:** Coal tar is a waste that is a by-product of the production of coke and coal gas from coal and is produced during the BF-BOF process of producing steel. Lower downstream demand for steel has led to a fall in steel prices, resulting in the closure of blast furnace operations of steel producers, causing an increase in coal tar prices. Of the total global coal tar produced, ~55-56% is used for coal-tar pitch production (used in aluminium and graphite production) and ~28% is used in carbon black oil production (**Exhibit 7**). We believe that the increasing proliferation of synthetic graphite and the high use of carbon pitch in it will further skew the usage of coal tar to coal tar pitch (CTP) rather than carbon black oil (CBO), blunting to an extent the advantage Chinese players had due to inexpensive and widely available CBO

Exhibit 7. As graphite production increases the advantage Chinese peers have will peter out

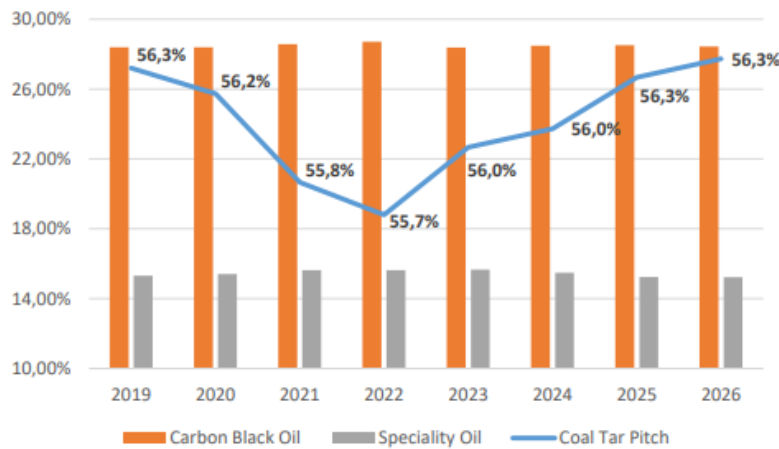


Figure 1. Global consumption of pitch is projected to increase to 56.5% for the upcoming years [1].

Source: Industry, JM Financial

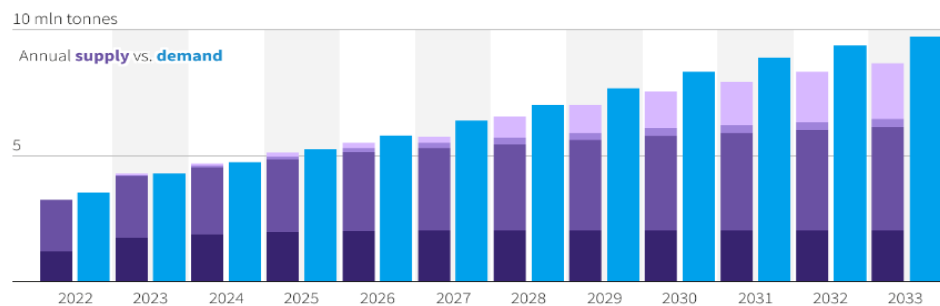
- China is expected to increase production of synthetic graphite from 1.6MMT in CY23 to around 2MMT by CY30. This bodes well for Coal-Tar use. We believe that this will lead to a further shift in use of Coal-Tar towards CTP rather than Carbon Black Oil. As Graphite is also used in constructing EAF's and with almost 200MT per annum of additional EAF capacity set to be added globally before 2026, demand for Graphite will soar resulting in further demand for Pet-Coke and as a result CTP.

Exhibit 8. As synthetic graphite demand increases, there will be a sincere increase in demand for pet-coke and as a result in CTP

Shortages looming of graphite for EV batteries

Deficits are due to kick in by 2025 and expand in coming years of graphite used in electric vehicle batteries as new mines fail to keep up with surging demand from automakers which are ramping up EV production

● Natural supply ● Synthetic supply ● Projects in construction ● Potential production ● Demand



Source: Project Blue, Reuters, JM Financial

- **Shift towards EV will further skew use of Coal-Tar to CTP:** Producing 1MT of graphite requires ~440kg of CTP (**Exhibit 9**). Graphite is used extensively in electric vehicle batteries. Each EV on average requires around 50-110kg of graphite for the anodes in the battery pack and EVs are expected to account for more than 50% of the natural graphite market, hastening the shift to synthesised graphite. As a result, synthetic batteries are expected to account for nearly [two-thirds of the EV anode market by 2025](#). Industry data suggests that graphite shortages are expected to intensify in the coming years with a global supply deficit of 777,000 tonnes by 2030.

Exhibit 9. A significant amount of Coal-Tar is used to produce Graphite

» **Growing Demand :** 1MT of Aluminium requires 100 kgs of Coal Tar Pitch and 1MT of Graphite requires 440kgs of Coal Tar Pitch

Source: Himadri, JM Financial

- **Rising share of EAF to hurt Chinese players:** Over the years, as environmental norms in China have become stringent, the shift from blast furnace to electric arc furnace (EAF) has gained steam. China wants to commission 16 new EAF plants before 2024 and also aims to close 14.72MT/year of old crude steelmaking facilities. This could lead to a net decrease of ~1MMT/year in China's total steel capacity. According to industry reports, EAFs contribute ~11% of current steel output and [China aims to increase this to ~15-20% by 2025](#) as in 2021 China approved the construction of 43 new EAFs with a total crude steel capacity of 29.33MMT/year. We believe that this could lead to an interesting scenario where coal tar (which is a waste of the blast furnace type steel plant and a raw material for carbon black manufacturing, especially in China), which earlier provided an advantage to Chinese players will now, owing to lower production, be an impediment to controlling cost.

- **Reduction in Steel Production in China also key:** With 3-4% coal-tar waste produced for a tonne of steel, the reduction in steel production in China also poses a significant threat to maintaining costs of Chinese producers of carbon black (CB). Chinese steel production has been on a downward trend. In 2018, the Chinese ministry of Industry and Information Technology set a capacity replacement rule that any new steel mill could only be set up if existing capacity equal to 1.25x/15.x (**Exhibit 10**) the capacity of the new steel mill is shuttered. The Chinese government has gone even further and limited annual production levels of crude steel in 2021 to reduce emissions and also increased the target for domestic scrap supply to 320MMT by 2025 (from 260MMT in 2020) for the EAF process of producing steel. This further underscores our belief that steel production through the BF-BOF (blast furnace-basic oxygen furnace) route will be under pressure. One tonne of steel roughly requires around 600kg (**Exhibit 11**) of coke and produces ~3-4% of coal tar (18-24kg). (**Exhibit 12**)

Exhibit 10. New capacity set up rules make it prohibitive to set up newer plants

From 2018 onwards, the Ministry of Industry and Information Technology (MIIT) has set 'capacity replacement' rules, stating that any new steel mill could only be built if existing capacity equal to 1.25 times the capacity of the new steel mill would be shuttered. In June of 2021, this 'capacity replacement' rule was increased to 1.5 times the capacity of the new steel mill, for key areas including Beijing, Tianjin, Hebei, the Yangtze River Delta, the Pearl River Delta, and the Fenwei plains areas (MIIT, 2021). These areas are home to the vast majority of China's steel mills, and are simultaneously the key areas identified for air pollution control. The capacity replacement rule does allow new steel mills using electric arc furnaces (EAF) to be built after shuttering an equal capacity of old BF/BOF blast furnaces steelmaking capacity. While the regulation is not explicit, policy makers have explained that new hydrogen-based and non-blast furnace projects such as Corex, Finex, HISMelt etc, will also need to comply with the capacity replacement requirement (MIIT, 2021).

Source: Industry, JM Financial

Exhibit 11. One tonne of steel requires roughly 600Kg of coke...

Basic Oxygen Furnace

The most commonly applied process for steel-making is the integrated steel-making process via the Blast Furnace – Basic Oxygen Furnace.

In the basic oxygen furnace, the iron is combined with varying amounts of steel scrap (less than 30%) and small amounts of flux. A lance is introduced in the vessel and blows 99% content is reduced by 90%, resulting in liquid steel.

Other processes can follow – secondary steel-making processes – where the properties of steel are determined by the addition of other elements, such as boron, chromium and molybdenum.

Optimal operation of the blast furnace demands the highest quality of raw materials – the carbon content of coke therefore plays a crucial role in terms of its effect in the furnace and quality hot metal and better productivity. Overall costs may be lower, as fewer impurities in the coke mean smaller amounts of flux must be used.

Around 0.6 tonnes (600 kg) of coke produces 1 tonne (1000 kg) of steel, which means that around 770 kg of coal are used to produce 1 tonne of steel through this production route.

Source: Industry, JM Financial

Exhibit 12. ... which in turn produces 3.5-4% of coke

ABOUT COAL TAR

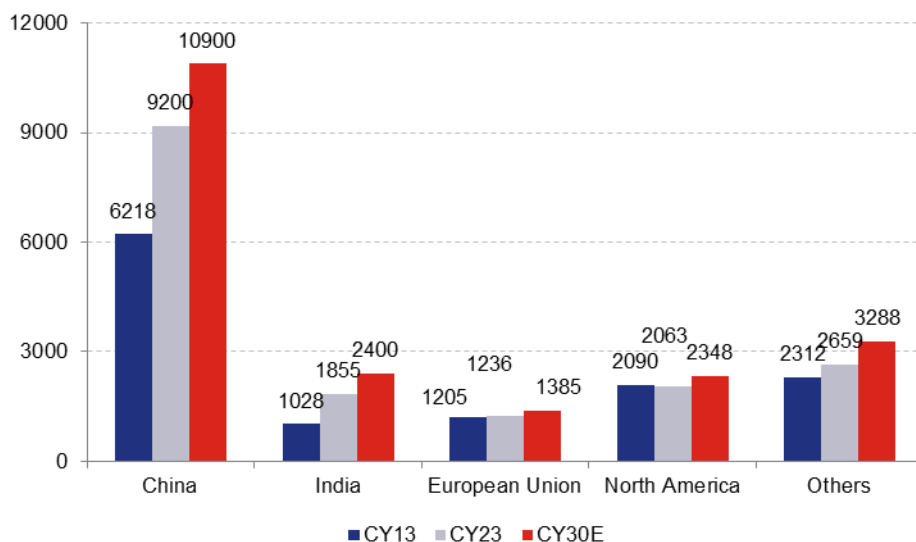
Coal Tar is a thick, black, viscous fluid generated during the carbonization of coal to convert it into coke in a recovery-type coke oven plant. Coal tar accounts for around 3.5-4% of volume of Coke produced.

Source: Industry, JM Financial

Cost competitiveness vs. China and lack of further capacity additions in Europe/North America bodes well for Indian players

- Demand for carbon black set to rise, primarily from tyre industry:** Of the total global carbon black production ~47% is from China and a further ~10% is from Asia ex China and India; India accounts for ~9%. Over the past decade, global capacity growth, at around 2.4%, has been in line with global demand growth. Industry reports suggest that demand for carbon black will rise to ~18.4MMT per year by 2030 of which ~6.9MMT would be fuelled by increasing demand in China and ~1.6MMT by rising demand in India. We believe that this rise would be primarily on account of robust demand for carbon black driven by tyres. Of an average tyre weighing around ~20kg, carbon black contributes ~20-22%. With the tyre industry expected to grow ~7% between 2021 and 2026, and with the tyre industry contributing ~70% of total carbon black demand, we believe that demand dynamics look strong for carbon black.
- Change in dynamics in China/Russia and NA and Europe vis-a vis India:** In 2018, China was one of the largest exporters of carbon black, exporting ~880KT that year. However, its exports had reduced to ~819KT by 2022, and there were significant reductions (~50%) MoM in 2023. Imports, on the other hand, have been increasing yearly from 2019, from 75.4KT that year to ~104KT in 2022, and 174.5KT already imported until Aug'23. We believe that this was as a result of higher RM prices which has, as a result, driven domestic carbon black prices higher, leading to relatively subdued utilisation operating rates in 1HCY23 (at close to 56%). The war in Ukraine had also caused a demand-supply imbalance especially in the procurement of virgin carbon black with industry estimates suggesting a [supply shortage of ~40%](#) vis-à-vis the years before the war. Russia exported roughly 700,000tns of carbon black of which ~500,000tns was exported only to Europe. Although there is an import quota of ~752,475tns in affect from 26th Feb'23 until 30th Jun'24, the regulation states that a complete import ban will come into force at the end of this period. We believe that the relatively slow pace of capacity additions from Europe and North American players (**Exhibit 13**), along with India's.

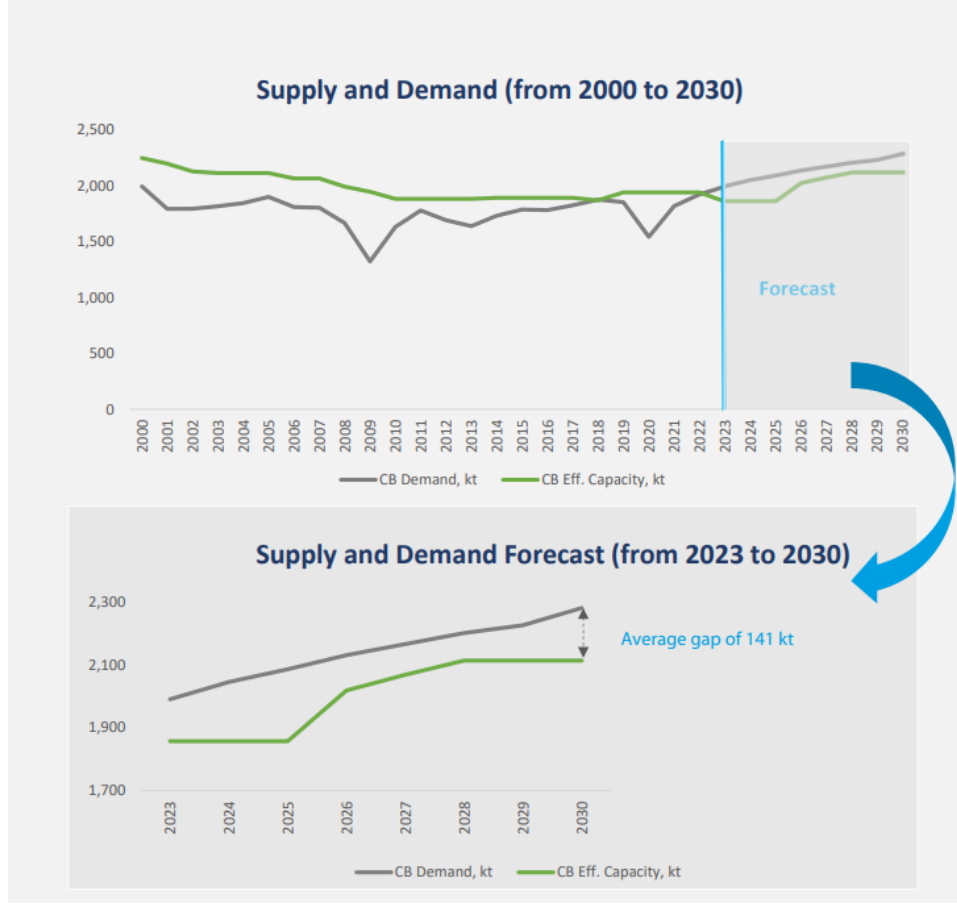
Exhibit 13. Europe has shown/ will show 3%/12% and North America has shown -1%/14% growth, the slowest across geographies over CY13-CY23 and CY23-CY30E



Source: Company, JM Financial

- North America has a severe demand-supply imbalance:** Orion Chemicals, one of the largest CB players globally, reiterated that the North America rubber market is bound to face a severe demand-supply imbalance from 2023 (**Exhibit 8**). From 2000 to 2023 there has been a slump in capacity as a result of plant closures and relatively flat supply. While demand too was steady until the mid-2010s, demand has been increasing steadily post the pandemic on the back of strong tyre replacement in North America and modest impact of the recession. We believe that these systemic issues will persist and be an opportunity for foreign carbon black players to enter the North America CB market. PCBL had indicated in its investor call that the logistics cost of transporting CB to Europe is similar to the cost it incurs when shipping within India. This lack of arbitrage may bode well for PCBL if it were to enter the North American market.

Exhibit 14. Supply demand dynamics in North America are ripe for a new entrant to disrupt

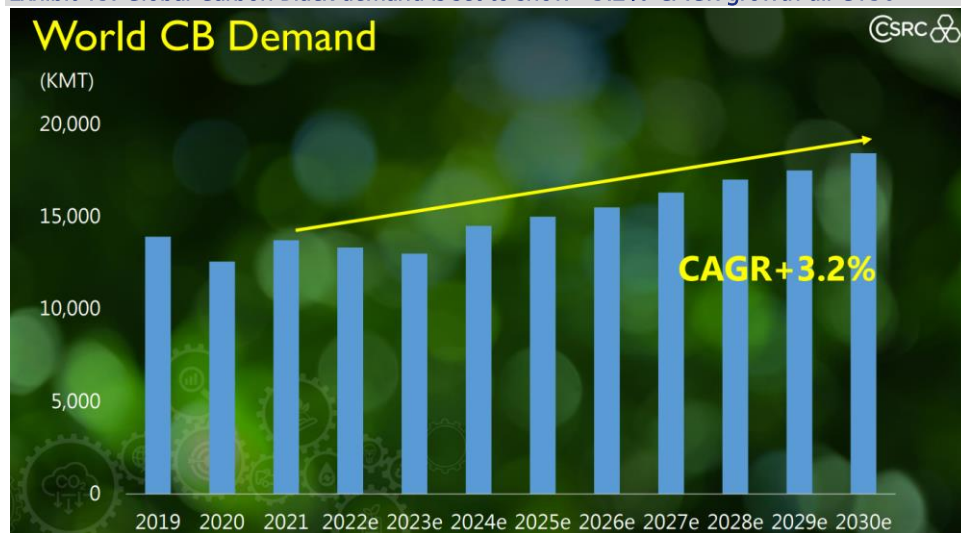


Source: Orion, JM Financial

Tyre sector growth to drive significant growth for Indian CB players

- Global Tyre Growth a structural growth story for Carbon Black players:** The tyre industry accounts for the bulk of carbon black demand, at roughly 70%. While global tyre demand for carbon black in tyres is expected to grow by 3-4% per year and global tyre production could reach 2.2bn units by CY24, the Indian market is expected to show 7% CAGR between 2021 and 2026. Investments in tyre plants from 2020 through 2025 are estimated at USD 20.4bn, according to Notch Consulting. North America is expected to see ~USD 3.1bn in new investments, including an [USD 100mn investment in Mexico](#) by Bridgestone to expand PC/LT capacity at its existing plant in Mexico and another [USD 225mn investment in Canada](#) with expectations to increase capacity by 18% to 20,000 units by 2023. China is expected to continue to be the leader in new tyre investments, accounting for ~27% of all new spending worldwide between 2020 and 2025. Newly announced projects include [Giti Tire's USD 1.1bn project in Changfeng](#), Anhui; Guizhou Tyre's USD 310mn truck and OTR project in Guizhou, Guiyang; Jiangsu General Science's USD 472mn project in Anqing, Anhui; Shandong Linglong's USD 950mn factory in Tongchuan, Shaanxi; and Sailun's USD 142mn project in Weifang, Shandong
- Carbon black demand heavily dependent on tyre industry:** [Each tyre roughly uses ~20-22% carbon black](#) as percentage of weight of the tyre. Global tyre sales were ~2.5bn units in CY22. We have assumed the average weight of a tyre to be ~18kg. Given that roughly 22% of the weight of a tyre is contributed by carbon black, total carbon black consumption is around ~10.7MMT. Industry reports peg CB demand in CY22 to be around 14.7MMT, and given that 70% of the CB is used for tyres total CB demand is ~10.7MMT. This calculation is further revalidated by CSRC International, a Taiwanese conglomerate, a leader in the carbon black and rubber industry. (Exhibit 15)

Exhibit 15. Global Carbon Black demand is set to show ~3.2% CAGR growth till CY30

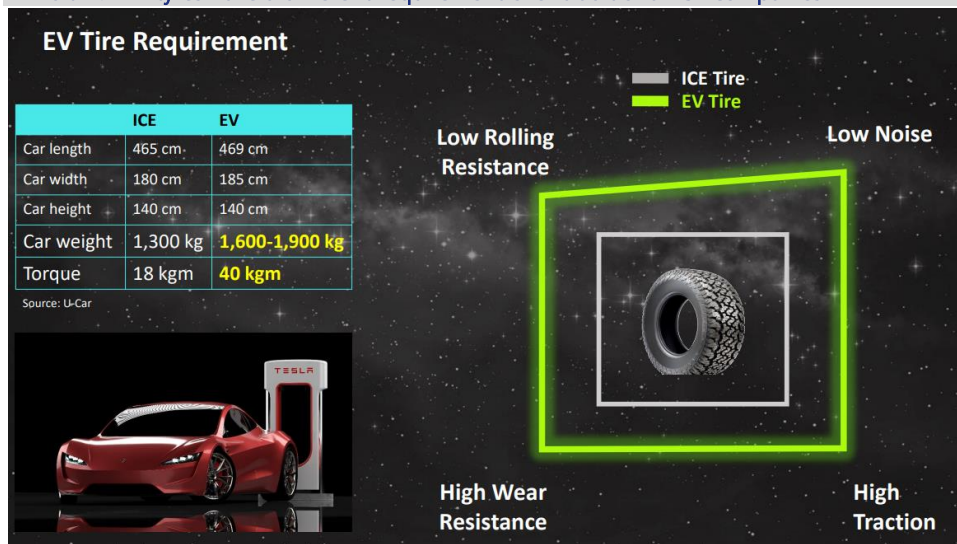


Source: CSRC, JM Financial

- Robust Auto sales are also a strong indicator of strong rubber demand...:** Domestic sales of passenger vehicles are set to rebound post the dip in FY20/FY21 with 3.9mn units sold in FY23 and 6-8% CAGR likely from FY23 to FY28 to 5.4mn units. Another lever for growth is the shift towards utility vehicles. The trend towards UVs (which employ 15" inch+ tyre rims) has been marked in the last 5 years. UV contribution to total PV sales was ~28% in FY18, and it has risen substantially to ~52% by FY23 with ~2mn units sold in FY23 of the total 3.9mn units. As the premiumisation trend catches on in auto sales, UV sales are expected to increase to 61-64% of total PV sales by FY28 (Exhibit xx), to 3.4mn-3.6mn units. Tyre manufacturers have been saying that on average tyre sales have shifted from lower 12"/13" inch tyres towards 14"-15" inch tyres, with strong sales of 16"/17" and 18" expected later in FY24.

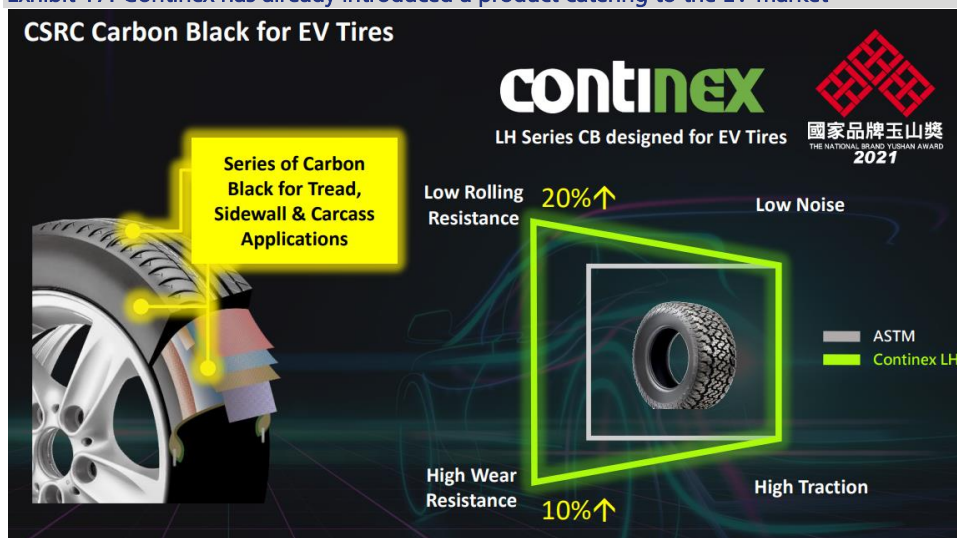
- ... while increasing proliferation of EV vehicles could also further supplement the tyre growth story: Currently, the BEV powertrain contributes ~0.2% of the overall powertrain market in FY21 and that is expected to increase to 4-6% by FY26. Global EV market share is expected to reach 50% by 2030 (Exhibit 20). Electric vehicles are currently slightly heavier than ICE vehicles with higher torque requirement. EV tyres have a roll requirement greater than that of ICE tyres (Exhibit 16 with a newer "Continex" tyre having achieved lower rolling resistance and higher wear resistance (Exhibit 17). Industry reports peg that EV tyres have a lower mileage compared to ICE tyres (Exhibit 18/Exhibit 19) as a result of higher car weight and torque. We believe that this trend should enable further tyre usage and benefit carbon black players as a whole as replacement of EV tyres increases replacement demand.

Exhibit 16. EV tyres have a different requirement over traditional ICE companies



Source: CSRC, JM Financial

Exhibit 17. Continex has already introduced a product catering to the EV market



Source: CSRC, JM Financial

Exhibit 18. But why are new tyres required... because structurally there are different requirements for EVs



Source: Industry, JM Financial

Exhibit 19. ... as demonstrated by two major carbon black players



Source: Orion, JM Financial

Exhibit 20. EV market is expected to be 50% of global PV and light-vehicle sales

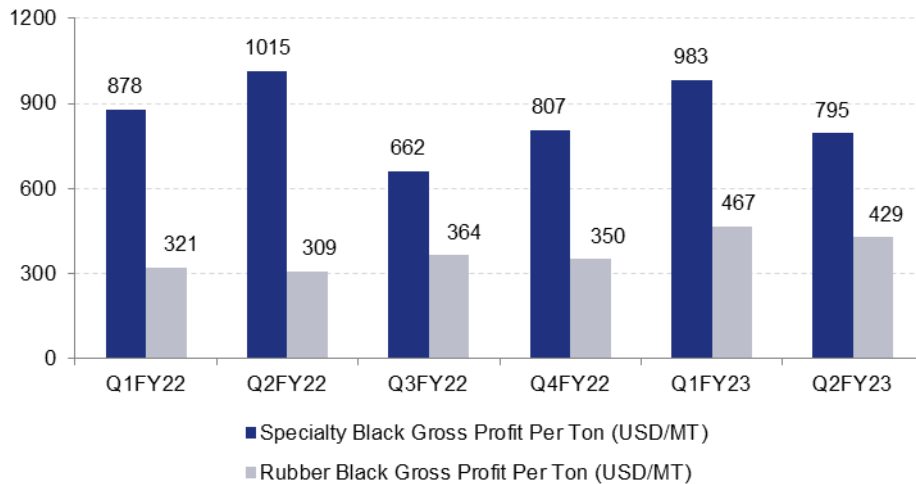


Source: CSRC, JM Financial

Specialty blacks offer margin expansion opportunities

- Specialty products offer further margin augmentation benefits:** While a significant amount of carbon black is used for tyre tread products, several CB players have been focusing on improving the mix of specialty and performance products in their overall portfolio. Performance products cater to non-tyre rubber applications like rubber mats, shoe soles, conveyer belts, sealants and gaskets and damping elements while specialty chemicals are used in non-rubber applications in food contact plastics, synthetic fibres, inks, paints, adhesives and sealants. Specialty blacks tend to have a significantly higher gross profit per tonne, roughly double that of rubber gross profit per tonne, with specialty blacks per tonne gross profit hovering ~USD 850/MT with rubber carbon blacks ~USD 379/MT (**Exhibit 21**).

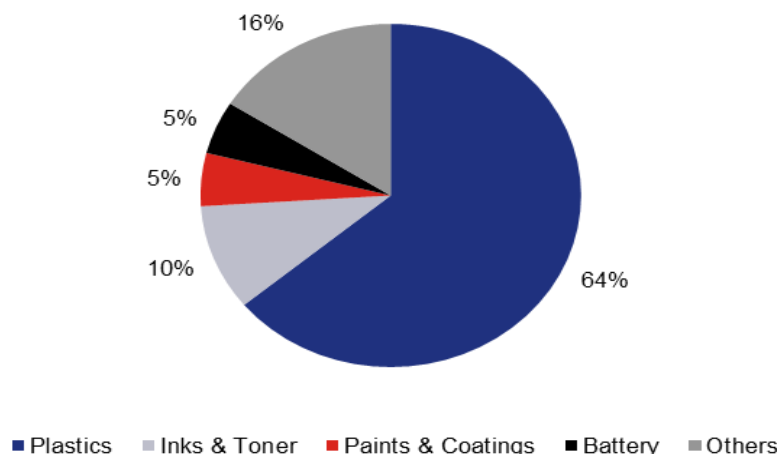
Exhibit 21. Specialty blacks’ profitability is significantly higher than rubber blacks



Source: Orion Carbon, JM Financial

- Specialty blacks are finding use cases in multiple areas:** Globally, non-rubber applications account for approximately 7% of carbon black demand with plastics being the largest at around 64% of the total volume share of the specialty black market (**Exhibit 22**). The plastics industry is typically serviced through carbon black master-batches in a variety of polymers including polyolefins and engineering plastics. In inks and coatings, a powder version of specialty carbon black is used for mass toner and tinting applications such as newspaper inks, packaging inks as well as industrial, architectural and automotive coatings.

Exhibit 22. Plastics are the largest use case of specialty blacks

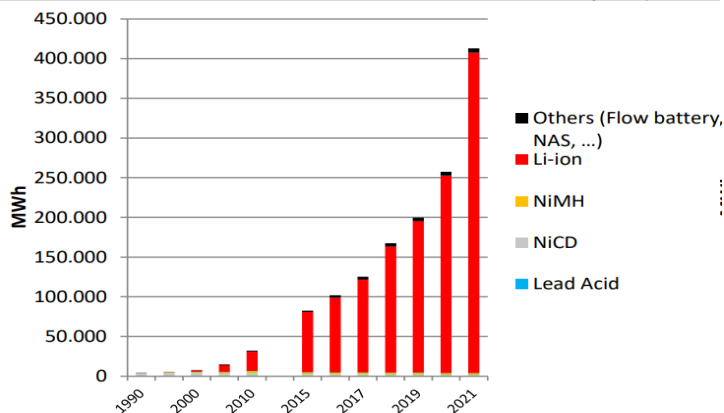


Source: Company, Himadri Chemicals, JM Financial

Usage of Carbon Black in LiB is the next lever for growth

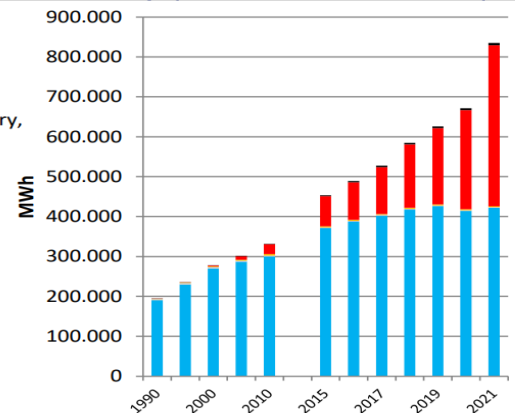
- Carbon black finds application in battery electrodes:** Speciality carbon black is also being used in energy storage as it has excellent electrical conductivity, making it an ideal conductive additive in lithium-ion batteries (LiBs), the main energy storage system in electric vehicles. Carbon black is a fundamental component in the electrodes in a LiB, because CB increases the electrical conductivity of the system, enabling better battery performance. The positive electrodes of lithium batteries mainly include lithium iron phosphate, ternary materials, lithium cobalt oxide, etc. However, these positive electrode materials have poor conductivity, therefore carbon blacks are added to the cathode to make the conductive network even and efficient while also increasing the capacity, output and service life of LiB. Carbon blacks are also finding applications in the anode electrode in the upcoming silicon anode technology to further improve the energy density of the LiB.
- Lithium-ion battery price to reduce as use becomes prolific majorly led by decrease in cell manufacturing and packing cost:** Lithium-ion (Li-ion) battery use has increased significantly since its advent in the early 2000s. In 2021, lithium-ion battery contributed roughly 50% of the overall battery output (in MWh) at ~400,000 MWh (**Exhibit 23/24**). Of the overall battery market, lithium ion battery output is expected to increase to over 1,081GWh by 2025 and 2,207GWh by 2030 by which lithium-ion battery should represent over 81% of the overall battery market (**Exhibit 25**).

Exhibit 23. Li-ion has a lion share of the overall new battery output...



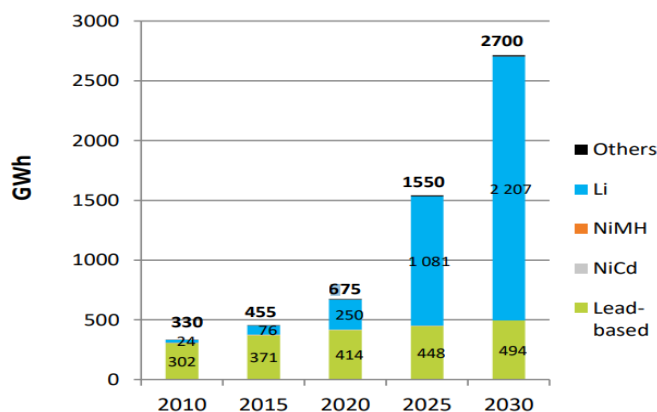
Source: Avicenne Energy, JM Financial

Exhibit 24. And contributes to roughly to 50% of the overall battery



Source: Avicenne Energy, JM Financial

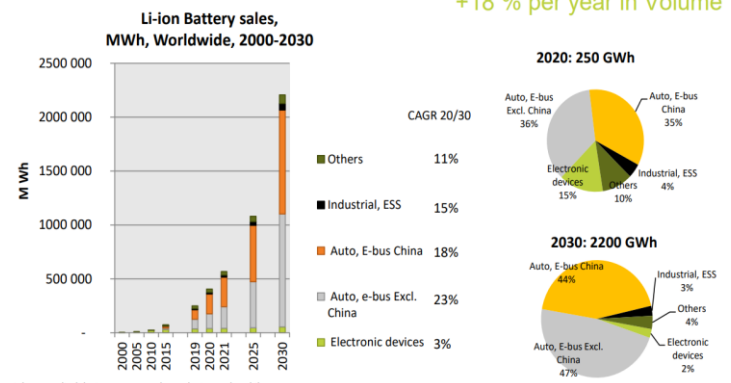
Exhibit 25. Li-ion battery output is expected to increase ~10x in the next 10 years...



Source: Avicenne Energy, JM Financial

Exhibit 26. ... with significant applications in EV batteries

From 250 GWh in 2020 to 2,2 TWh CAGR 2020/2030 +18 % per year in Volume

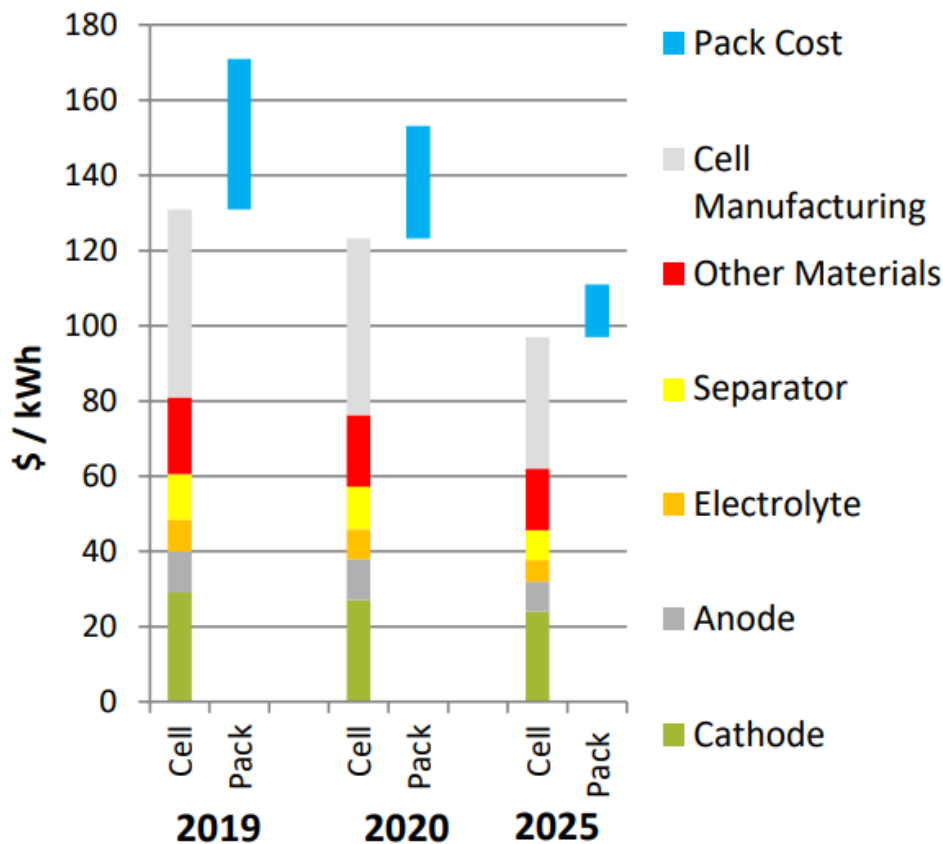


Source: Avicenne Energy, JM Financial

- As consumption and proliferation of Li-ion batteries increases, the overall price of the battery is also expected to decrease over the years with industry expectations of the cost reducing by ~35% from 2019 levels (**Exhibit 27**). While the battery pack price is expected to reduce overall, there is almost negligible change in the price of cathode, some reduction in other materials (which includes CB) with the bulk of the reduction as a result of the reduction in Cell Manufacturing Cost and Pack Cost. We believe that this should bode well for ancillary players in the EV battery industry especially carbon black manufacturers like PCBL.

Exhibit 27. Li-ion battery pack price for EV

LI-ION BATTERY PACK PRICE FOR EV



Source: Industry, JM Financial

- Carbon blacks work to improve energy density of the LiB:** Carbon black is widely used as a conductive agent in lithium-ion batteries due to its high specific surface area and ability to form a conductive network in the electrode. The tight packing of carbon black particles facilitates close contact between them, creating a structure with wide branches that enhances electrical conductivity. Additionally, carbon black's amorphous core and graphite-like outer layer provide intrinsic electronic conductivity, which is crucial for transporting electrons generated in the electrodes to the current collector. CB is a common conductive additive in Li-ion batteries because of its small particle size, large specific surface area (SSA), and high electrical conductivity. CB has been reported to share many features with hard carbon such as 1) a disordered carbon lattice, 2) a sloping redox potential between 0 and 1.2 V vs. Li/Li+, and 3) a low initial Coulombic efficiency (ICE). These features of CB translate into high reactivity in a LiB.

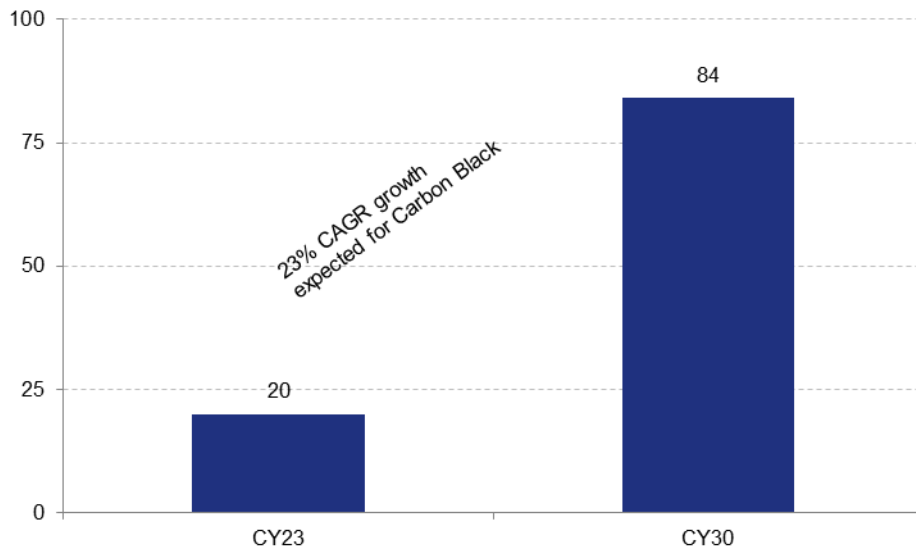
- The use of carbon black is critical for proper functioning of the battery. As the number of electric vehicles on the road grows rapidly, their reputation as a safe mode of transport relies on the cleanliness of ingredients in the battery management system. The purity of carbon black is essential to optimum safety performance. The impurity levels are extremely miniscule, on a scale of parts per billion. Even the smallest contaminant has the potential to cause a circuit failure and essentially destroy the battery. Currently, the total market demand of carbon black used in LiBs is 20kt and Orion expects that the total demand should increase to ~84kt by 2030 (Exhibit 29).

Exhibit 28. Carbon black usage on Graphite electrode

Graphite electrodes were fabricated in the Argonne National Laboratory Cell Analysis, Modeling and Prototyping (CAMP) facility and are composed of 91.83 wt % graphite powder (Hitachi MagE3), 2 wt % carbon black (Timcal C45), 6 wt % PVDF binder (Kureha 9300), and 0.17 wt % oxalic acid; this mixture

Source: ACS publications, JM Financial

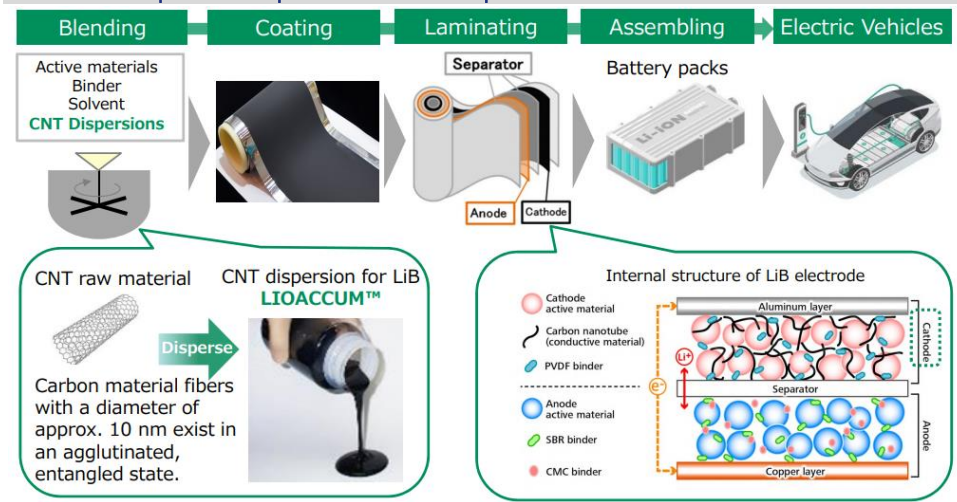
Exhibit 29. Carbon Black use in LiB is set to increase substantially over the next 7 years



Source: Orion, JM Financial

- The next generation of battery technology will see the entry of CNTs with several players showing keen interest:** Traditionally, graphite has been the dominant anode material for LiBs because of its high electric conductivity. Carbon nanotubes (CNTs) are a candidate material for use in lithium ion batteries due to their unique set of electrochemical and mechanical properties. The incorporation of CNTs as a conductive additive at a lower weight loading than conventional carbons, like carbon black and graphite, presents a more effective strategy to establish an electrical percolation network. CNTs are more conductive and elongated than the conventional conductive agent carbon black (**Exhibit 33**) and this helps increase the capacity, output and service life of the LiB (**Exhibit 31**). CNTs like CBs too are finding application on both electrodes of a LiB (**Exhibit 23/35**).

Exhibit 30. LiB production process and CNT dispersions



Source: ToYo InKSC, JM Financial

Exhibit 31. Effect of using CNTs in LiB as a conductive agent

Benefit to LiB

- **High capacity:**
 The capacity of LiB is increased by increasing the active materials inside the battery.
- **High output:** Increasing the output of LiB with high conductivity
- **Long life:**
 The service life of LiB is increased through the uniform use of the active material.

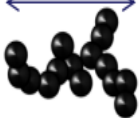
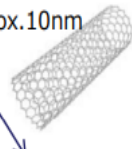
Source: ToYo INKSC, JM Financial

Exhibit 32. CNTs can be conductive agents on both ends of the LiB battery

In the new battery electrode, carbon nanotubes — a form of pure carbon in which sheets of carbon atoms are rolled up into tiny tubes — “self-assemble” into a tightly bound structure that is porous at the nanometer scale (billionths of a meter). In addition, the carbon nanotubes have many oxygen groups on their surfaces, which can store a large number of lithium ions; this enables carbon nanotubes for the first time to serve as the positive electrode in lithium batteries, instead of just the negative electrode.

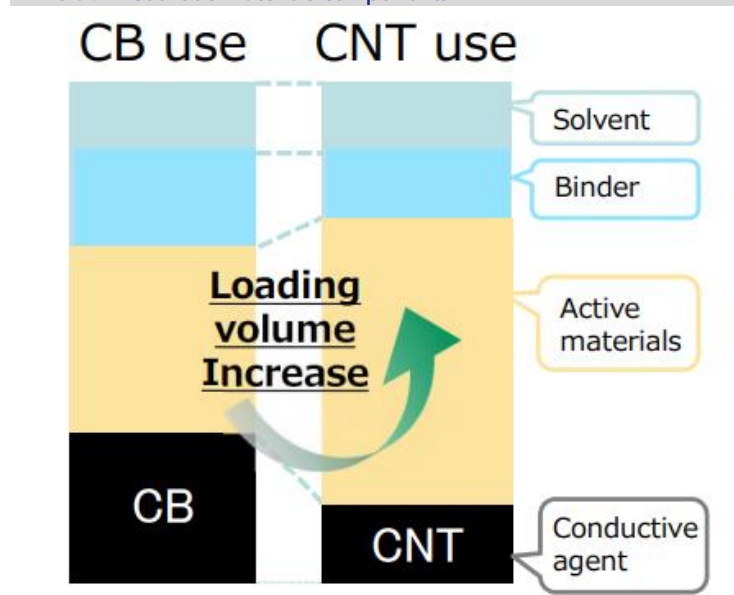
Source: MIT, JM Financial

Exhibit 33. Conductive Agent Features

	CB	CNT
Shape, size	Approx. 500nm  A structured form with connected particles	Approx. 10nm  Fine and long fibers
Conductivity	Low	High
Additive amount	More	Less
Dispersion difficulty	Easy	Difficult

Source: ToYO INKS, JM Financial

Exhibit 34. Cathode materials components



Source: ToYO INKSC, JM Financial

Exhibit 35. CNT has use cases on both ends of the Li-ion battery

Use	Features	Electrolyte	Cathode materials		Anode materials	
			Active materials	Conductive agent	Active materials	Conductive agent
Stationary Solar battery etc.		Liquid	LFP*1	CB	Graphite	-
Consumer Mobile/PC etc.		Liquid	NCA/Ternary *2	CB	Graphite	-
Automotive	Low cost/ Low capacity	Liquid	LFP	CB	Graphite	-
	High capacity		NCA/Ternary	CNT	Graphite	-
	Super high capacity		NCA/Ternary	CNT	Graphite·SiOx *3	CNT
	All-solid state battery	Solid Sulfide-based	NCA/Ternary	CB/CNT	Graphite	-

*1 : LFP [LiFePO4] A cathode active material with low energy density and low cost
 *2 : NCA [Li (Ni Co Al) O2] / Ternary [Li (Ni Co Mn) O2] A cathode active material with high energy density
 *3 : SiO xAn anode active material with capacity more than four times greater than that of graphite. Its problem is that it expands and contracts significantly during charge and discharge.

First Half of FY2023 Business Briefing

Source: ToYO INKSC, JM Financial

- Several companies including the world largest CB producer Cabot have shown interest in expanding into carbon nanotube technology. Cabot acquired CNT producer Shenzhen Sanshun Nano New Materials Co. Ltd for USD 100mn to broaden customer offerings beyond its existing conductive carbons. In FY22, Cabot also completed the first phase of a CNT dispersion capacity expansion at its existing facility to cater to demand while also looking to double capacity by 2024. [Similarly, Birla Carbon recently completed the acquisition of Nanocyl SA](#), a Belgian company that is the worldwide leader in multi-wall carbon nanotubes business.
- PCBL already has a presence in the battery segment through its 'Energia' range of carbon blacks. These higher grades cater to conductive polymers, electrostatic discharge (ESD) and battery applications. We believe that, incrementally, PCBL could also look to enter the carbon nanotube segment as this offering offers an entry to more high-margin, high-value, down-the-value-chain products with even more direct use cases in LiBs than carbon blacks.

- **Concerns of silicon replacing graphite are overblown...**: Silicon has long held out promise as a medium for anodes, because it can hold 10 times as many lithium ions by weight as graphite. Tesla has reportedly added up to 5% silicon in its batteries anodes with Sila Nanotechnologies working with Mercedes-Benz to supply silicon anode-based EVs for the G-Class wagon. Sila ships the powder to the cell manufacturer, who then integrates it in the battery cell and then ships the cell to Mercedes Benz. These are supplied to premium products and while the opportunity size is huge and silicon is significantly lighter (**Exhibit 36**), even Sila admits that displacing the existing graphite material is difficult. This is on account of the relative difficulty in scaling up plants to the scale of graphite-based electrodes currently. [Sila estimates that it is only by 2035 that silicon technology will become a viable enough option in a choice between graphite or silicon.](#)

Exhibit 36. Silicon is 5x lighter than graphite

In the battery, you have two main components — cathode and anode, and a little separator between them. Our material is dramatically **lighter** than the graphite, about five times **lighter**, and it takes up about half the space when it is fully charged. We get to shrink that part quite a lot. Then, you have to fill in the empty space with both anode and cathode. You

Source: S&P, Sila Nanotechnologies, JM Financial

- **... but even when Silicon eventually does become prevalent, carbon black will be required:** Experiments with silicon-based anodes have been plagued by technical challenges – including volume expansion of the anode when loaded with lithium ions and the resulting material fracture that can happen when an anode expands and contracts. Over the years, however, silicon anodes have become more resilient through the use of silicon-carbon black composite. The CB structure is formed by the aggregation of primary particles in different directions to form networks in various directions and space created inside a CB aggregate [due to random growth](#) and, therefore, these spaces serve as a buffer to accommodate silicon in the event of usual volume expansion. The silicon anode has clear benefits over graphite-based technologies on account of lighter weight and higher efficiency with major investments in capex or labour (**Exhibit 37/38**).

Exhibit 37. Silicon anode benefits vis-à-vis graphite electrode

graphite from the batteries. One of the biggest advantages of this technology is that it is five or six times more effective than graphite. For every metric ton of our material, we displace five or six metric tons of graphite. As we get to economies of scale and get to a million-vehicle scale, we can make batteries with our technology cheaper than batteries using graphite.

Source: S&P, Sila Nanotechnologies, JM Financial

Exhibit 38. Silicon anode benefits vis-à-vis graphite electrode

you really want a range of 300 miles. You can replace a part of the graphite with our silicon and achieve that range target.

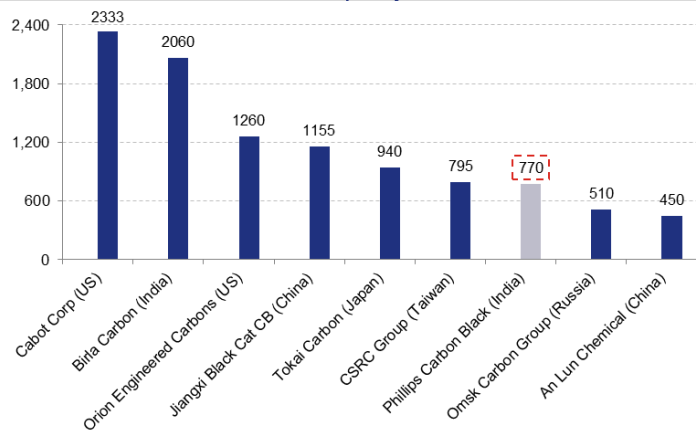
If you replace all the graphite, we currently deliver a 20% increase in energy density over the world's best cells. It depends on your starting point a little bit, and then over time, we will get to 30% or 40% improvements in new product versions.

Source: S&P, Sila Nanotechnologies, JM Financial

PCBL: Market leader in Blacks foraying into high margin battery applications

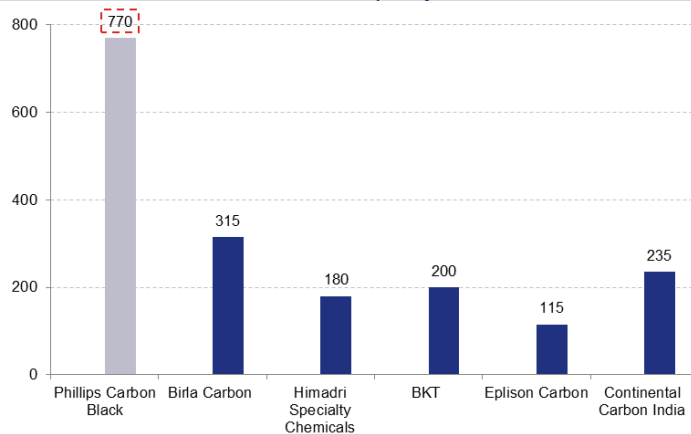
- PCBL is India’s largest and the world’s 7th largest carbon black company (**Exhibit 39/40**) with three major product lines: 1) Tyres; 2) Performance blacks, and 3) Specialty blacks. Established in 1960, PCBL has grown to become a leader in the carbon blacks segment; it has entered into non-tyre products through its performance blacks segment and also forayed into non-tyre/non-rubber products used in plastics, toners, inks and batteries. This shift from commodity grade low-margin tyre segment to high-margin specialty black segment (**Exhibit 41**), with the company highlighting that EBITDA per tonne in the specialty black segment is ~2-2.5x of the tyre grade margin, should bode well for the company.

Exhibit 39. Global carbon black capacity



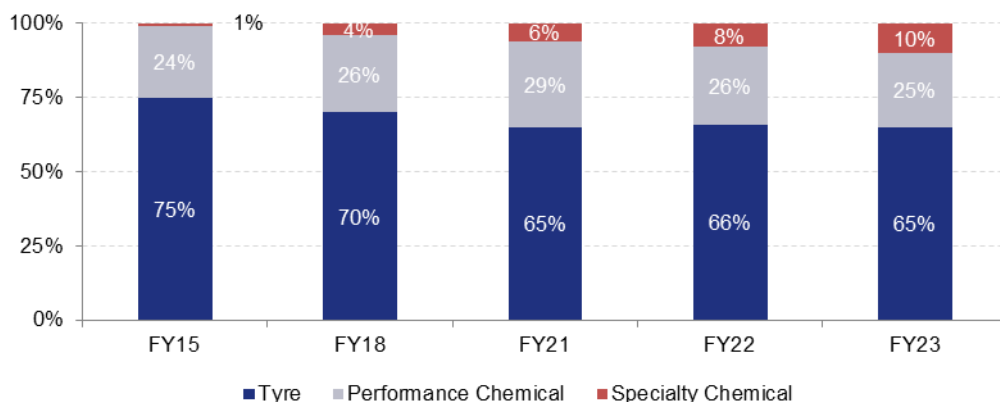
Source: Company, JM Financial

Exhibit 40. Domestic carbon black capacity



Source: Company, JM Financial

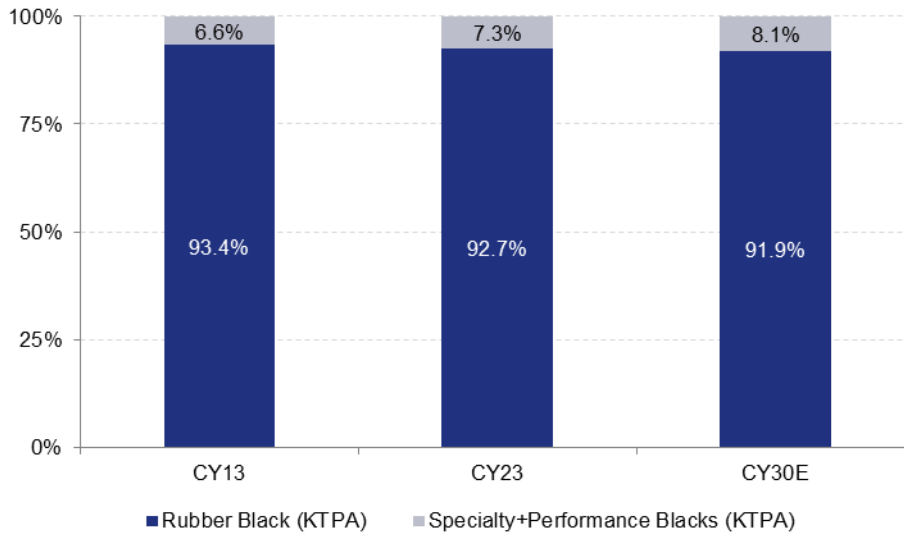
Exhibit 41. PCBL’s segmental break-up has been veering towards higher margin products...



Source: Company, JM Financial

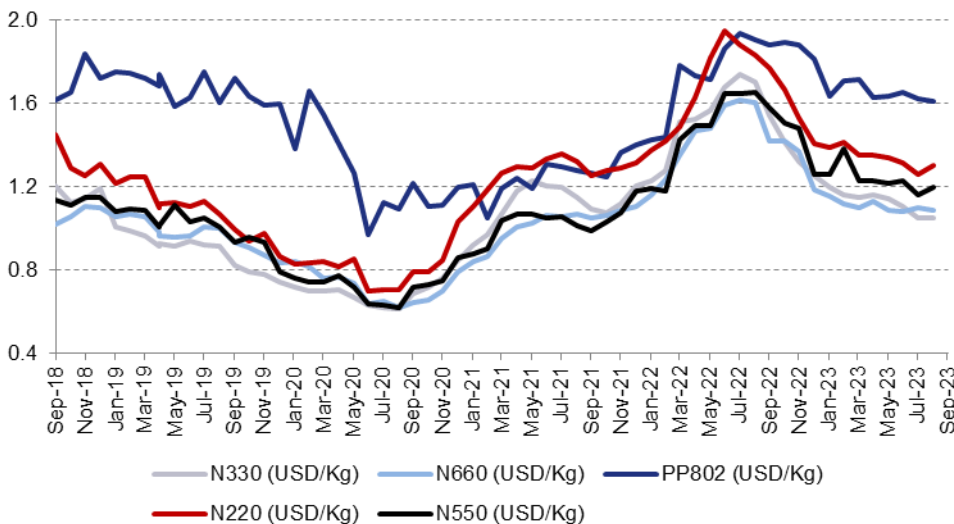
- Global carbon black demand is expected to reach ~18.4MMT by 2030 of which rubber blacks is expected to be around 91.9% of the overall CB market (**Exhibit 42**). There has been a clear trend globally of demand for CB shifting towards down-the-value-chain products. PCBL too has a broad range of products with some specialty black products (**Exhibit 43**) commanding a significant premium over its tyre application carbon black products.

Exhibit 42. ... In conjunction with global trends where CB is increasing shifting towards specialty and performance blacks



Source: Company, JM Financial

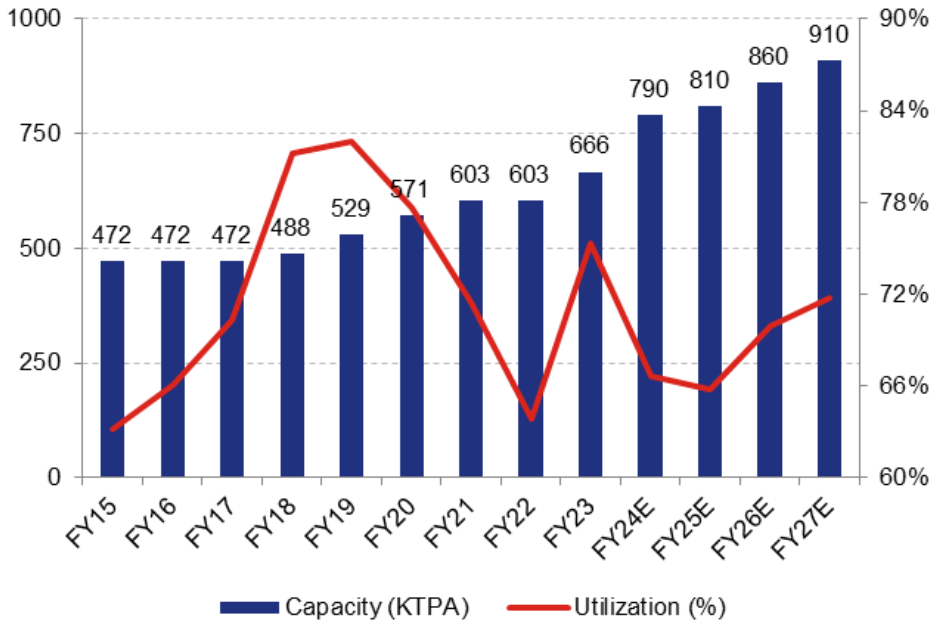
Exhibit 43. Specialty blacks (PP802) are usually at a significantly higher premium (USD/Kg) over traditional tyre carbon blacks (N660/N33)



Source: Industry, JM Financial

- PCBL has incurred a capex of close to INR 19bn from FY17-FY23 to add capacity at its plants (now 5). This was done to 1) increase production lines of existing carbon black applications, and 2) also to start specialty black lines at its Palej and Mundra facilities. The bulk of this capex (INR ~11.3bn) was dedicated towards 1) Greenfield expansion (~INR 8.1bn) in Chennai with an overall capacity of ~147KTPA catering to increasing tyre and performance blacks capacity and 2) Brownfield expansion (~INR 3.1bn) at the Mundra facility to increase capacity by 40KTPA focusing on specialty blacks.
- This, we believe, reiterates the company's focus on increasing market share domestically while also looking to attract demand from American and European tyre companies that are facing supply related challenges. PCBL has also acquired small pieces of land adjacent to its existing facilities. The company is guiding for a capex of INR 1.5bn for brownfield expansion presumably at its existing Mundra facility to introduce a third line for specialty blacks and another INR 1bn for its Chennai facility that it expects to bring fully on-stream by the end of FY24. We expect utilisation to dip in FY25 as the entire 147KTPA capacity comes on stream but revert to average levels by FY27. (Exhibit 44)

Exhibit 44. Capacity expansion since FY17 has bolstered PCBL’s traditional rubber black capacities while also setting the stage for the next leg of growth through specialty blacks



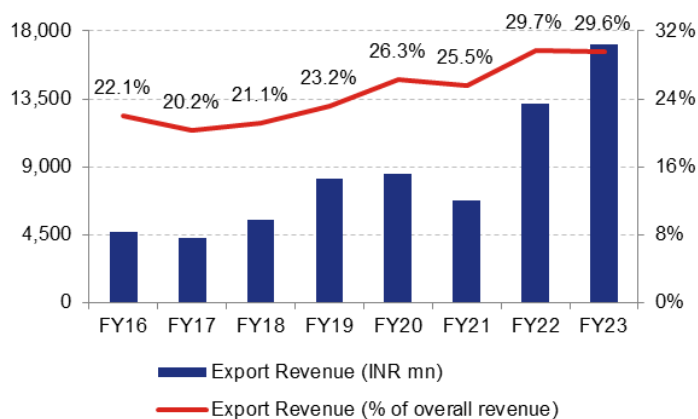
Source: Company, JM Financial

- PCBL has ~35% market share of the domestic carbon black market, with other players having sub-20% market share. With its recently added capacities we believe PCBL is in a sweet spot to increase its domestic and global market share. This is especially true for specialty blacks. Specialty blacks have been growing at 6-7% CAGR in the last 4-5 years with PCBL a relative newcomer in the space. The overall market is ~1MMT with PCBL currently having capacity of only around ~20,000 tonnes, with a quarterly run-rate of around 16,000 tonnes.
- The company is currently exporting ~70% of the specialty blacks it produces as it wants to grow its market internationally. The domestic market currently is significantly import-dependent, and as PCBL does not have a wide portfolio of products in the specialty and performance blacks segment it intends to focus on the international markets. As the company develops new products not only in the conductive and superconductive grade specialty black segment but also in the ink, paint and dye performance black segment, adding 9-10 new grades every year, we believe that it could soon look to be an import substitution player for high grade specialty and performance blacks.
- The company's export share has been improving thanks to demand-supply imbalances in North America and SEA. Exports of its specialty and performance blacks are also a key driver for its rising export share as a percentage of revenue (**Exhibit 45/46**). As the Europe market requirements continue to increase while key Russian imports of carbon black freeze in early FY24, we believe that PCBL is well placed to capture global market share and increase its export contribution to revenue.

Recently, the management indicated that the company is increasingly focusing on Europe. In the past few years, Chinese capacity has increased at a slower pace than before, while European players have not added capacity in the last 10 years; as a result, there is a vacuum on the supply side that PCBL aims to fill. Energy prices in Europe have increased substantially and, therefore, European players are not as competitive compared to Indian players. Hence, the European export market is an opportunity for most CB players.

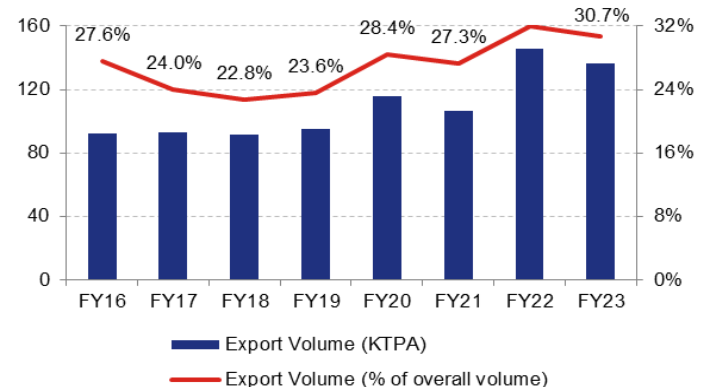
PCBL has, over the last 6-7 years, invested a lot of money in building and improving its supply chain relationships in the region. The logistics cost of supplying to European players is not at a differential compared to domestic players. The company revealed that export logistics cost is ~USD 70/tonne while the cost of supplying to the MRF facility in Tamil Nadu is also quite similar. Pricing too is favourable in Europe as it is not a very price-sensitive market. We believe that the company's foray into Europe, especially with its R&D team based out of Belgium, will help improve the company's mix towards exports and higher-margin specialty and performance blacks.

Exhibit 45. PCBL's rising export revenue...



Source: Company, JM Financial

Exhibit 46. ...and growing export volume bode well for margin expansion

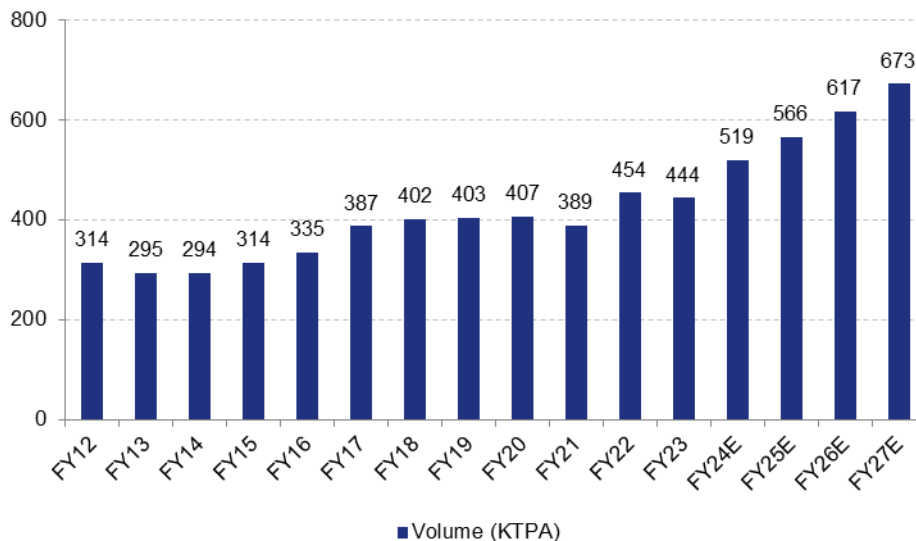


Source: Company, JM Financial

Process efficiencies benefit to further complement focus on specialty blacks

- PCBL's carbon black realisation has rising since FY17, after its investment in improving process efficiencies, shift towards higher-margin specialty black and performance black products and capacity expansions in its existing plants.
- With strong volume demonstrated over the years by PCBL, we believe that the next leg of growth on the volume front will be driven by the introduction of the greenfield Chennai facility and the current two specialty black lines in the Mundra facility. With almost negligible capacity additions by players in India, demand-supply imbalances in North America and strong demand from Europe, we believe that PCBL will demonstrate ~12% volume CAGR over FY23-FY26E. This could be further improved if the company introduces a third specialty blacks line in Mundra if it believes demand in the domestic and export markets is robust.

Exhibit 47. We expect PCBL to register a 12% volume CAGR over FY23-26E

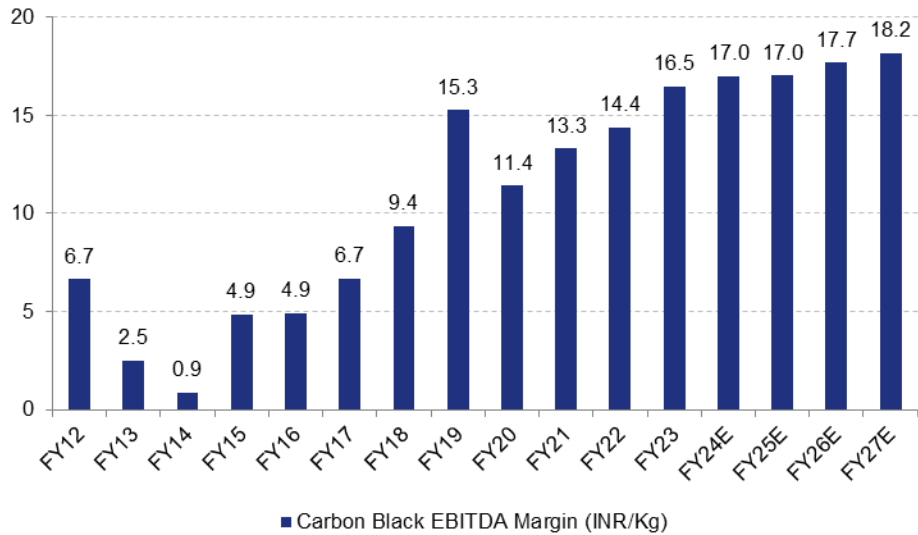


Source: Company, JM Financial

- We believe that the introduction of the Royale Black line along with increasing capacity led by rising utilisation has led to a clear improvement in EBITDA/kg (**Exhibit 48**). Debottlenecking exercises across PCBL's facilities that have lifted capacity by 43,000 MT, capacity additions of 56,000 MT in Mundra and capacity expansion at Palej have fuelled the increasing expansion in EBITDA margin as utilisation has improved, leading to higher operating leverage. The introduction of the Royale Black line of specialty products with 'Bleumina' catering to engineering plastics, 'NuTone' catering to ink, paints and coating applications and the recently introduced 'Energia' line of products catering to conductive applications have significantly bolstered the EBITDA/kg metric to double-digit levels since FY19.
- We believe the capacity expansion at the Mundra facility of 40KTPA further reaffirms the company's commitment towards gearing to specialty and performance blacks, especially high-value, high-margin battery applications. PCBL has already been catering to the first generation dry-cell battery technology, and its new range of Energia products are catering to the next generation of second and third generation of batteries, i.e., Lead Acid and Lithium-Ion. The new grades of existing products will cater to the low end of lithium batteries and not the high-end 'Tesla-esque' batteries while the R&D lab is focusing on bringing to market several pure superconductive grades that will be used in high-end EV battery applications.

- PCBL's EBITDA profile has improved substantially, demonstrating 24% CAGR over FY16-FY23. We believe that this has been on account of increasing utilisation at the existing plants leading to higher operating leverage and a clear change in mix towards specialty and performance blacks. Specialty and performance blacks were around 1% of overall capacity in FY16 and have now scaled up to 11% in FY23. Specialty blacks EBITDA per Kg is around 2.0-2.5x to that of rubber blacks and as a result we expect PCBL's EBITDA/Kg to improve further as its capacity mix increases towards specialty blacks at 15-16% of overall capacity in FY25/26E. On these lines, we estimate EBITDA/kg to increase to 18/kg by FY27E from ~11-16/kg over FY20-FY23.

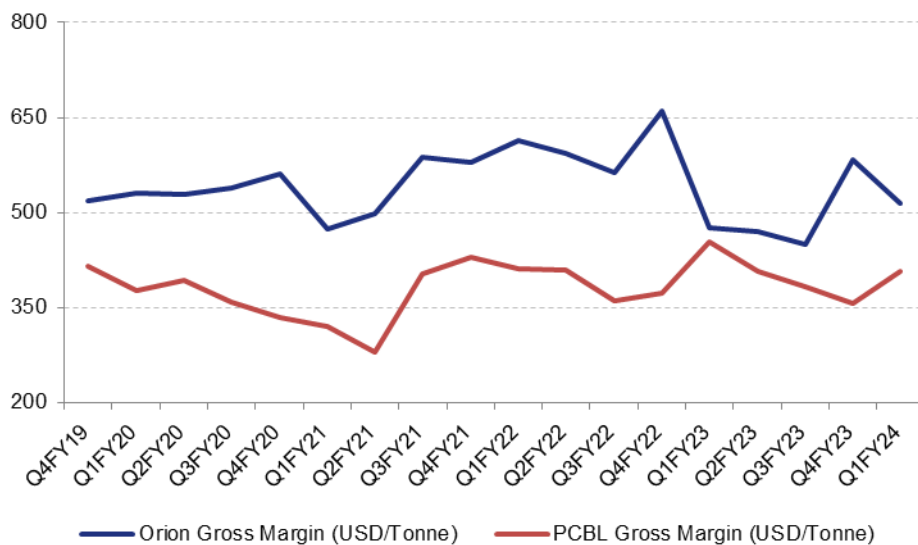
Exhibit 48. EBITDA/Kg has been rising steadily



Source: Company, JM Financial

- When comparing with Orion, one of the largest CB players globally, we see a clear distinction in PCBL's gross spreads (**Exhibit 49**). We believe that this gulf (42% premium with average blended margin of USD 541/tn for Orion vs. USD 381/tn for PCBL) is on account of the higher mix of high-margin, high value specialty blacks. Orion is one of the few CB players that makes conductive and super-conductive additives. We believe that PCBL's eventual entry into more core specialty blacks, specifically in super conductive battery applications, is a significant rerating and earnings expansion event that is not being factored in by the market.

Exhibit 49. Orion's blended gross margin is significantly higher



Source: Orion, Company, JM Financial

Manufacturing facilities: R&D and expansions key for edge over contemporaries

PCBL's commitment to growth is strongly reflected in the expansion and addition of new plants. PCBL has a capacity of c. 770KTPA spread over its five plants across India, namely Mundra, Palej, Kochi, Durgapur and the new Greenfield project in Chennai, with all plants in close proximity to ports. The Palej and Mundra facilities have specialty black manufacturing units while the legacy plant focuses on tyre applications. After all expansions, PCBL will have a total capacity of c.790KTPA, of which 112KTPA will be dedicated to specialty blacks. PCBL in 1HFY24 commissioned 1) 20KTPA of the total 40KTPA specialty carbon black capacity with further addition expected to come on stream by the end of the fiscal and 2) the 147KTPA Chennai facility. PCBL intends to 1) fully commission the specialty carbon black capacity addition in Mundra and 2) gradually ramp up production from the current 9KTPA to ~20KTPA per quarter by 4QFY24.

Exhibit 50. Capacity expansions

Capacity (MT)	FY23	FY24	Addition
Dahej, Gujarat	163,500	163,500	-
Kochi, Tamil Nadu	92,500	92,500	-
Palej, Gujarat	142,250	142,250	-
Mundra, Gujarat	204,750	244,750	40,000
Chennai, Tamil Nadu	63,000	147,000	84,000
Total Capacity	666,000	790,000	124,000

Source: Company, JM Financial

PCBL had, in its recent concall, reiterated that it had the capability to add another 90,000 tonnes of capacity at its Chennai facility. This will be mostly for runner grade for tyre applications. The Mundra plant, even after the expansion later in the year, will still have some capacity for a third specialty line if required.

PCBL has given a lot of impetus to its R&D processes, having set up two R&D centres, one in India and the other in Belgium. The R&D team has been successful in introducing several new products like CarboNext®10 and CarboNext®20 with lower surface area having very low levels of carbonaceous contaminants with applications in mechanical rubber goods and ultra-high reinforcing for tyre applications. The R&D team along with its process technology team has been instrumental in expanding the company's product portfolio to cater to a diverse set of requirements. PCBL aims to increase R&D spending on green/sustainable products by 20% by FY25 from the baseline FY22 levels. The company has launched 20+ new products in the last 3 years with 11 new carbon black grades launched just in FY23; we believe that these initiatives should improve the company's product mix, leading to margin expansion while also increasing the range of products offered, helping further bolster sales.

The R&D unit has around 60 scientists and engineers split across four major verticals. One vertical is focused on introducing new products to PCBL's catalogue. Another focuses on producing the said new product at its existing plants. The third vertical focuses on improving RM efficiency focusing on oil engineering. There are different kinds and applications of oil and all carbon blacks are not made from similar oils. The fundamental research being carried out in the verticals is aimed at improving the existing mechanism or introducing new mechanisms so as to improve the purity of the finished carbon black. The fourth vertical focuses on post-production treatment. Post production treatment involves treating and curing the carbon black to improve and, in some cases, achieve the carbon blacks' intended properties through various chemical properties. We believe that this focus on R&D will reap rich dividends, leading to a broader gamut of products with higher margins.

Exhibit 51. Assumptions and estimates

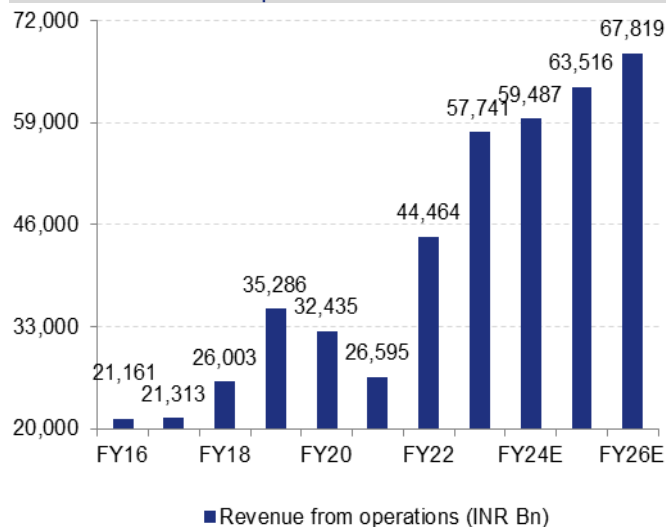
	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24E	FY25E	FY26E
Installed Capacity (MT)	472,000	488,000	529,000	571,000	603,000	603,000	666,000	790,000	810,000	860,000
Carbon Black (MT)	448,000	464,000	489,000	531,000	531,000	531,000	594,000	678,000	680,000	730,000
Specialty Blacks (MT)	24,000	24,000	40,000	40,000	72,000	72,000	72,000	112,000	130,000	130,000
Utilisation (%)	81.2%	81.9%	77.7%	71.4%	63.8%	75.3%	66.7%	65.8%	69.9%	71.8%
Production (MT)	383,316	399,904	410,798	407,887	384,786	454,187	443,966	519,440	566,190	617,147
Sales Volume (MT)	387,345	402,069	403,423	406,791	389,261	454,187	443,966	519,440	566,190	617,147
Carbon Black Realisation (INR/Kg)	47.55	61.52	85.05	77.61	66.59	95.85	126.85	111.63	109.40	107.21
Carbon Black Gross Margin (INR/Kg)	17.82	22.08	30.54	25.91	26.99	28.90	32.02	33.14	33.80	34.14
Carbon Black EBITDA Margin (INR/Kg)	6.66	9.37	15.27	11.41	13.31	14.38	16.47	17.00	17.04	17.69

Source: Company, JM Financial

Financials

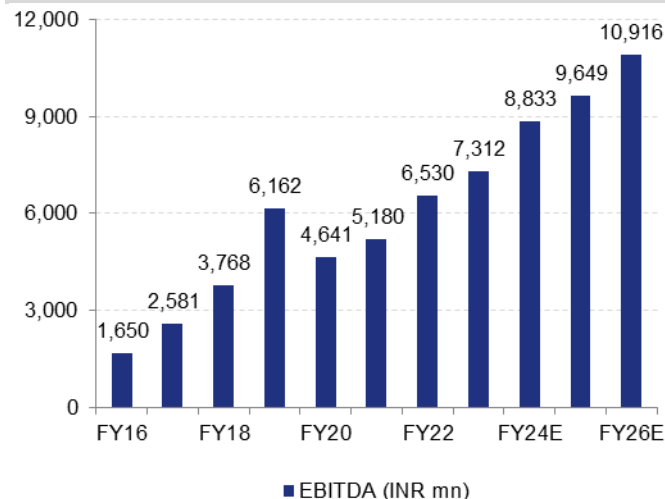
- **Expect volume CAGR of 12% over FY23-26E:** With strong volume demonstrated over the years by PCBL, we believe that the next leg of growth on the volume front will be driven by the introduction of the Greenfield Chennai facility and the current two specialty black lines in the Mundra facility. With almost negligible capacity additions by players in India, demand-supply imbalances in North America and strong demand from Europe, we believe that PCBL will demonstrate ~12% volume CAGR over FY23-FY26E. This could be further improved if the company introduces a third specialty blacks line in Mundra if it believes demand in the domestic and export markets is robust.
- **Per kg EBITDA margin slated to rise with higher specialty black volumes:** PCBL's EBITDA profile has improved substantially, demonstrating 24% CAGR over FY16-FY23. We believe that this has been on account of increasing utilisation at the existing plants leading to higher operating leverage and a clear change in mix towards specialty and performance blacks. Specialty and performance blacks were around 1% of overall capacity in FY16 and have now scaled up to 11% in FY23. Specialty blacks EBITDA per Kg is around 2.0-2.5x to that of rubber blacks and as a result we expect PCBL's EBITDA/Kg to improve further as its capacity mix increases towards specialty blacks at 15-16% of overall capacity in FY25/26E. On these lines, we estimate EBITDA/kg to increase to ~18/kg by FY26E from ~14/kg over FY20-FY23. As a result we expect EBITDA to increase from INR 7.3bn in FY23 to INR 10.9bn in FY26E demonstrating 14% EBITDA CAGR over the period and PAT is likely to reach INR 6.2bn by FY26E (12% CAGR over FY23-26E).
- **We expect PCBL's net debt normalising over FY25/26:** We see Gross debt coming down substantially from FY25 onwards led by a substantial improvement in EBITDA and cash flow generation. OCF is expected to improve substantially during the same period from INR 7.4bn in FY23 to INR 9.6bn in FY25 and INR 11.1BN in FY26 as operating leverage kicks in. With further reduction in capex intensity and any maintenance capex we believe to be funded through internal accruals we expect FCF to improve to INR 3.3bn/INR 4.0bn in FY25/26E.

Exhibit 52. Revenue is expected to show 6% CAGR over FY23-FY26E



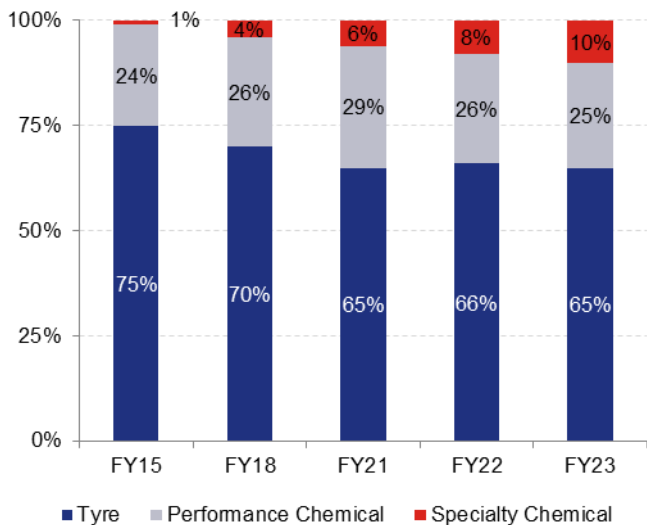
Source: Company, JM Financial

Exhibit 53. With EBITDA expected to show 14% CAGR over FY23-FY26E



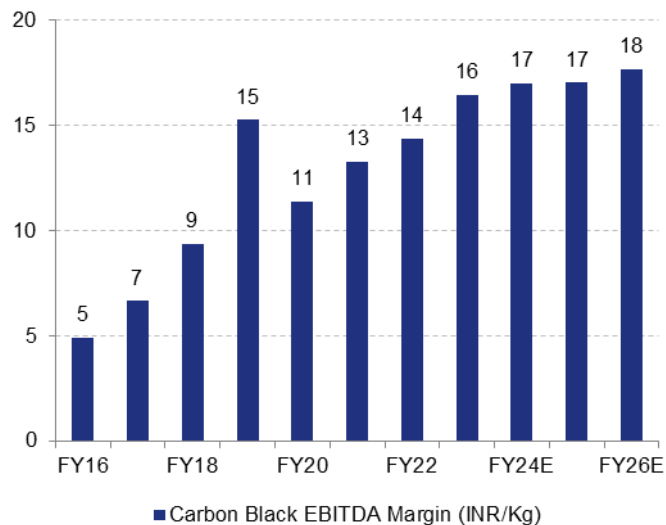
Source: Company, JM Financial

Exhibit 54. PCBL's mix has changed over the years gearing towards Performance and Specialty Chemicals



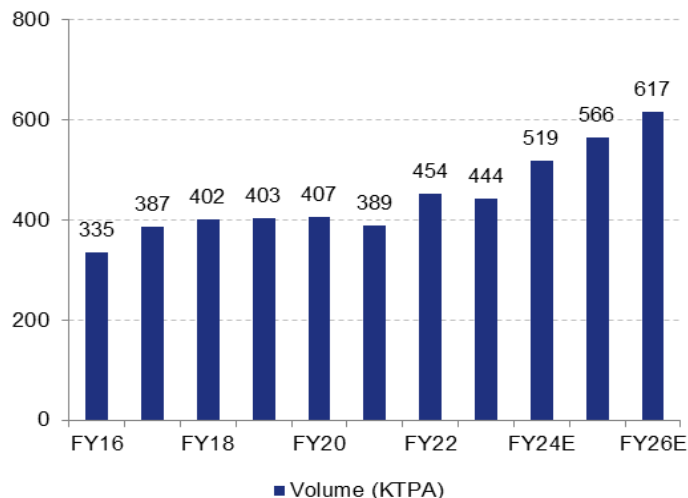
Source: Company, JM Financial

Exhibit 55. Resulting in a clear improvement in PCBL's EBITDA realisation



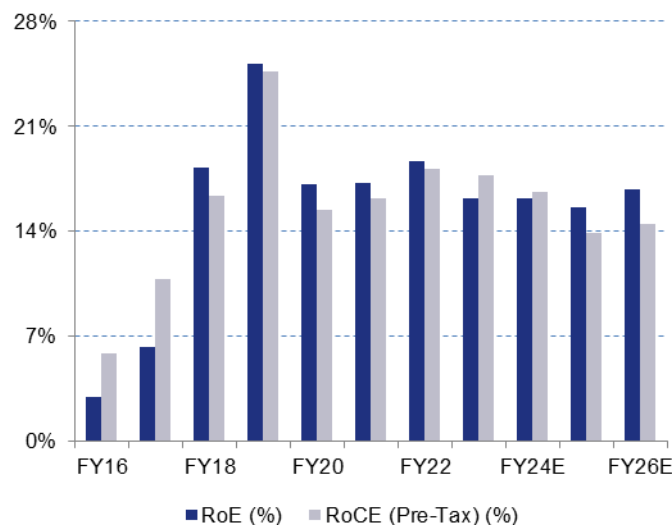
Source: Company, JM Financial

Exhibit 56. Volume growth across segments will lead to higher operating leverage



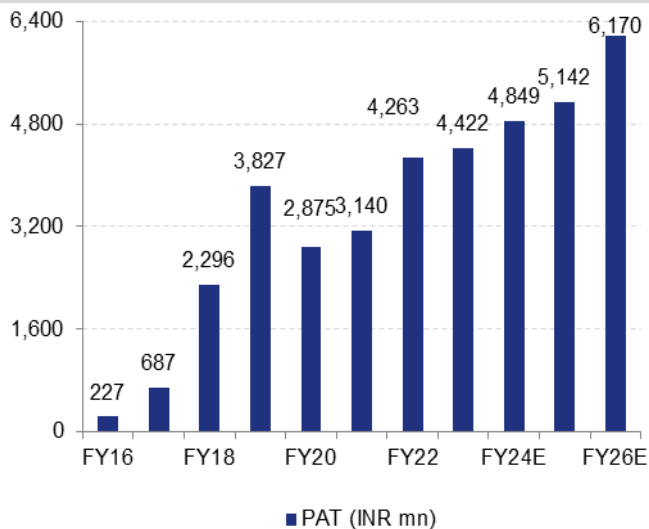
Source: Company, JM Financial

Exhibit 57. RoCE/RoE(pre-tax) are expected to stabilise to ~15/16%



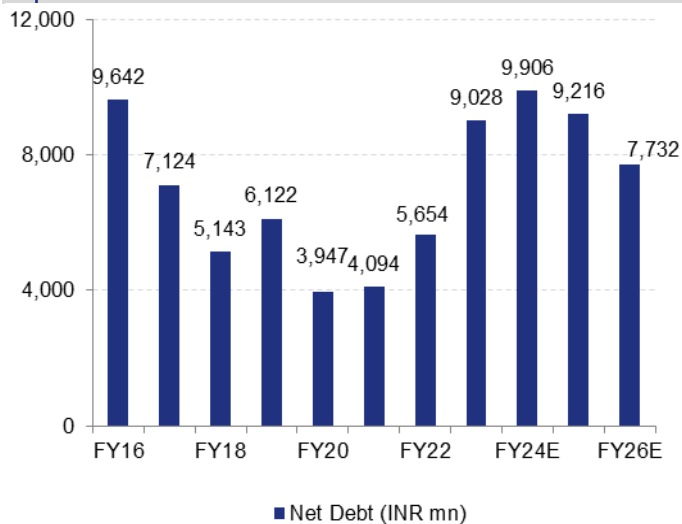
Source: Company, JM Financial

Exhibit 58. PAT CAGR expected to be ~12% over FY23-FY26E as interest costs reduce



Source: Company, JM Financial

Exhibit 59. Net Debt is also set to improve significantly as capex requirement eases



Source: Company, JM Financial

Valuation

We initiate coverage on PCBL with a BUY rating and a Dec'24 TP of INR 290/share (based on 18x Dec'25E EPS). We believe the valuation premium to its Chinese peer (Jiangxi Black Cat Carbon), which is trading at ~13x CY25E EPS, is justified given Chinese players are at a disadvantage due to higher feedstock costs. Moreover, PCBL's increasing share of specialty blacks along with the upcoming super conductive carbon black is paving the way for a multiple re-rating from a traditional commodity to a semi-specialty play. Besides, comparison with North American and European players will not be appropriate, in our view, given limited growth avenues for them.

We also revalidate our TP using DCF. In our DCF, we build a WACC of 10.4% (based on 7% risk free rate, 5.0% equity risk premium, after tax cost of debt 6%, and debt/equity of 0.3x) and terminal growth of 5.0%.

Exhibit 60. Our DCF based TP of INR 290 implies 35% upside from CMP

INR mn	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E	2036E
Net sales	59,487	63,516	67,819	72,414	77,321	82,483	87,906	93,511	99,286	1,05,218	1,11,295	1,17,501	1,23,817
YoY (%)	3.0	6.8	6.8	6.8	6.8	6.7	6.6	6.4	6.2	6.0	5.8	5.6	5.4
EBITDA	8,833	9,649	10,916	12,230	13,059	13,930	14,846	15,699	16,569	17,454	18,351	19,257	20,044
Margin (%)	14.8	15.2	16.1	16.9	16.9	16.9	16.9	16.8	16.7	16.6	16.5	16.4	16.2
Depreciation	1,626	2,096	2,306	2,536	3,332	3,624	3,919	4,216	4,517	4,821	5,127	5,437	5,750
EBIT	7,207	7,554	8,610	9,694	9,727	10,306	10,928	11,483	12,053	12,634	13,224	13,820	14,294
Margin (%)	12.1	11.9	12.7	13.4	12.6	12.5	12.4	12.3	12.1	12.0	11.9	11.8	11.5
EBIT (1-tax)	5,766	6,118	6,406	7,212	7,237	7,668	8,130	8,543	8,967	9,400	9,839	10,282	10,635
(-) Capex	3,500	4,000	4,400	4,796	4,844	4,892	4,941	4,991	5,041	5,091	5,142	5,193	5,245
% of revenues (%)	5.9	6.3	6.5	6.6	6.3	5.9	5.6	5.3	5.1	4.8	4.6	4.4	4.2
(-) Change in WC	2,522	662	707	(416)	256	238	216	182	144	102	57	8	(45)
FCFF	1,370	3,552	3,605	5,368	5,469	6,162	6,891	7,587	8,299	9,027	9,767	10,518	11,184
Discount factor	-	0.25	1.25	2.25	3.25	4.25	5.25	6.25	7.25	8.25	9.25	10.25	11.25
Discounted free cash		3,465	3,184	4,293	3,960	4,040	4,091	4,078	4,039	3,978	3,897	3,800	3,659
DCF Summary													
Risk free rate	7.0												
Equity risk premium	5.0												
Beta	1.0												
Ke	11.8												
After tax cost of debt (%)	6.0												
WACC (%)	10.4												
Terminal growth (%)	5.0												
Discounted free cash flow (INR mn)	46,485												
Terminal value (INR mn)	70,603												
Enterprise value (INR mn)	1,17,088												
Less: Net debt/(cash) (INR mn)	8,105												
Equity value (INR mn)	1,08,983												
No. of shares (mn)	377												
Equity value per share (INR)	290												

Source: JM Financial

Exhibit 61. Valuation comparison of carbon black companies

	ROE (%)		PE (x)		EV/EBITDA (x)	
	CY24E	CY25E	CY24E	CY25E	CY24E	CY25E
Cabot corp	27.2	29.5	11.0	9.8	6.6	6.1
Orion Engineered carbons	29.4	29.0	8.0	7.2	5.3	5.0
Jiangxi Black Cat Carbon	11.5	14.2	18.0	13.0	9.4	6.0

Source: JM Financial, Bloomberg

Exhibit 62. Chemical companies peer valuation

Company	Rating	CMP (INR)	TP (INR)	P/E (x)				P/B (x)				EV/EBITDA (x)				ROE (%)			
				FY23	FY24E	FY25E	FY26E	FY23	FY24E	FY25E	FY26E	FY23	FY24E	FY25E	FY26E	FY23	FY24E	FY25E	FY26E
SRF	BUY	2,353	3,040	29.9	37.0	28.2	22.4	6.3	5.4	4.6	3.9	19.2	21.3	16.8	13.5	22.9	15.7	17.8	19.0
UPL	BUY	563	800	11.1	15.2	10.7	8.9	1.4	1.3	1.2	1.1	6.2	6.7	5.9	5.4	13.6	8.8	11.5	12.6
PI Industries	BUY	3,708	4,295	45.3	36.5	32.2	26.8	7.7	6.4	5.3	4.4	33.9	26.8	22.5	18.6	18.4	19.1	18.0	18.0
Deepak Nitrite	BUY	2,130	2,340	33.2	40.3	27.3	22.5	6.9	5.9	4.9	4.0	21.7	24.9	17.3	14.3	22.9	15.8	19.6	19.5
Clean Science	BUY	1,388	1,790	49.4	58.6	42.3	32.1	14.4	11.7	9.2	7.2	35.4	41.1	29.0	22.5	33.2	22.0	24.3	25.1
Navin Fluorine	BUY	3,662	4,725	45.4	45.0	32.1	23.4	7.8	6.9	5.9	4.9	32.1	31.1	23.4	18.4	18.6	16.2	19.7	22.8
Fine Organics	SELL	4,280	3,185	22.4	36.2	42.1	40.3	8.7	7.3	6.4	5.7	16.4	23.4	26.2	24.4	47.6	22.0	16.3	15.1
Galaxy Surfactants	HOLD	2,835	2,650	27.5	32.5	31.0	29.2	5.6	4.7	4.1	3.6	18.5	20.1	18.8	17.3	22.0	15.8	14.2	13.2
PCBL Ltd.	BUY	215	290	18.3	16.7	15.8	13.1	2.9	2.6	2.3	2.1	12.3	10.3	9.4	8.1	16.2	16.3	15.6	16.8
Aether Industries	BUY	897	1,130	84.0	73.0	48.7	36.0	8.8	5.4	4.9	4.3	58.3	46.3	31.2	23.5	16.0	9.4	10.6	12.7
Anupam Rasayan	HOLD	925	980	54.7	51.9	36.2	26.8	4.2	3.3	3.0	2.7	22.2	20.1	16.2	13.0	8.8	7.3	8.7	10.6
Archean Chemicals	BUY	536	665	15.1	18.1	11.7	9.3	4.0	3.6	2.8	2.1	9.8	11.6	7.2	5.2	45.2	22.1	26.6	25.7
Tatva Chintan Pharma Chem	HOLD	1,515	1,530	68.6	72.4	40.8	30.2	6.5	4.6	4.1	3.7	57.6	34.1	23.3	18.6	9.9	7.4	10.7	12.9
India Pesticides	HOLD	284	200	23.2	27.4	24.5	21.2	4.3	3.7	3.3	2.8	16.6	18.3	16.1	13.8	20.3	14.6	14.2	14.3

Source: Bloomberg, JM Financial

Key risks

- **Largely dependent on external tyre and auto sector industry:** There is a significant concentration risk as a substantial percent of the business is dependent on the global/domestic automotive industry. Any systemic risk to the auto sector could impact its offtake significantly
- **RM volatility:** Raw materials for PCBL's are susceptible to volatility in prices. Any significant changes in the price of CBFS which is dependent on crude oil pricing may have an impact on PCBL's EBITDA/ton realisations and as a result on the bottom line if costs are not passed through.
- **Capex Ramp-Up teething issues:** The new Chennai plant may face teething issues as it comes on stream fully in FY24. A slow ramp up in capacity or unplanned plant shutdowns may significantly lower utilisation and as a result offtake which may result in muted revenues. These challenges could also lead to reduced operating leverage leading to subdued margins

Board of Directors and Key Managerial Personnel

Board of Directors

Sanjiv Goenka, is the Chairman of the Company. He has been a director on the Board since 1986. He is currently on the board of directors of various companies including Saregama India Limited, Firstsource Solutions Limited, Spencer International Hotels Limited, Haldia Energy Limited, RPSG Ventures Limited, CESC Limited, Spencer and company Limited, Spencer's Retail Limited and ATK Mohun Bagan Private Limited.

Kaushik Roy, is the Managing Director and CEO of the Company. He has been a director on the Board since 2013. He has about 30 years of experience spread over Apollo Tyres, Gujarat Ambuja Cement, and PCBL. He was Indian Tyre Industry Representative on the Industry Body of International Rubber Study Group, Singapore; and also the Member of Governing Council, RSDC (Rubber Skill Development Centre), India. He holds degrees in MTech (Mechanical) from IIT Kharagpur; and is an MBA from the University of Tokyo.

Shashwat Goenka, is a Non-Executive Non-Independent Director of the Company. He has been a director on the Board since 2014. He is currently on the board of directors of various companies including Spencer International Hotels Ltd., Retailers Association of India, RPSG Ventures Limited, Spencer's Retail Limited, Firstsource Solutions Ltd. and CESC Limited. He is a graduate from The Wharton School of Business, University of Pennsylvania, Philadelphia, with a Bachelor of Science in economics, specialising in finance, marketing and management. Currently, Shashwat Goenka is the Sector Head of RP-Sanjiv Goenka Group's Retail & FMCG sector

Preeti Goenka, is a Non-Executive Non-Independent Director of the Company. She has been a director on the Board since 2018. She is currently on the board of directors of Saregama India Limited. She was the President of the Ladies Study Group of Indian Chamber of Commerce, Kolkata, currently is an Executive Committee Member of the Birla Industrial & Technological Museum, Kolkata.

Paras Kumar Chowdhary, is a Non-Executive and Independent Director of the Company. He has been a director on our Board since 1999. He earlier was the Managing Director of CEAT Limited.

Pradip Roy, is a Non-Executive and Independent Director of the Company. He has been a director on the Board since 2011. Pradip Roy is a Certificated Associate of Indian Institute of Bankers (CAIIB), Management Graduate from Faculty of Management Studies, Delhi University and holds a BSc. (Hons) degree in Petroleum Engineering from Indian Institute of Technology, Dhanbad (Formerly, known as Indian School of Mines, Dhanbad).

Rusha Mitra, is a Non-Executive and Independent Director of the Company. She has been a director on our Board since 2021. Rusha Mitra is a Law Graduate from W.B National University of Juridical Sciences, Kolkata. She is a partner in the Corporate & Commercial practice group in Khaitan & Co., Kolkata, and specialises in corporate restructuring, mergers, acquisitions, demergers, reconstructions, re-organisation and advises companies on a wide range of corporate law, insolvency and bankruptcy-related matters.

R. K. Agarwal, is a Non-Executive and Independent Director of the Company. He has been a director on our Board since 2021. He has been a Partner with S. R. Batliboi & Co. (Member firm of EY) since 1978 and was the Managing Partner of the Firm at the time of his retirement in June 2013. He was a Director of Ernst & Young India Pvt. Ltd. and a senior member of the leadership team of Ernst & Young in India. He was a director of The Institute of Internal Auditors, USA as well as the President of The Institute of Internal Auditors, India.

T C Suseel Kumar, is a Non-Executive and Independent Director of the Company. He retired as managing director of Life Insurance Corporation in 2021. Presently he is on the board of Axis Bank Limited, BSE Limited and Lakshmi Machine Works Limited.

K. Jairaj, is a Non-Executive and Independent Director of the Company. He is member of the 1976 batch of the Indian Administrative Service (IAS). Mr. K. Jairaj retired as Additional Chief Secretary, Government of Karnataka. He has a B.A. Hons degree in Economics from Bangalore University; M.A. Economics from Delhi School of Economics; M.P.A. from

Woodrow Wilson School of Public and International Affairs, Princeton University, USA. He has a LLB Degree from Bangalore University.

S Ravi, is a Non-Executive and Independent Director of the Company. He has a doctorate in finance and is a practising Chartered Accountant, having over 33 years of experience. He holds a Diploma in Information System Audit (DISA) and is an Associate Member of Association of Certified Fraud Examiners (CFE), USA. He is the Founder and Managing Partner of Ravi Rajan & Co. LLP. He has served as the Chairman and Director of BSE Ltd and Chairman and Director of UTI Trustee Company Pvt Ltd.

Financial Tables (Consolidated)

Income Statement		(INR mn)				
Y/E March	FY22A	FY23A	FY24E	FY25E	FY26E	
Net Sales	44,464	57,741	59,487	63,516	67,819	
Sales Growth	67.2%	29.9%	3.0%	6.8%	6.8%	
Other Operating Income	0	0	0	0	0	
Total Revenue	44,464	57,741	59,487	63,516	67,819	
Cost of Goods Sold/Op. Exp	31,338	43,525	42,272	44,377	46,748	
Personnel Cost	1,589	1,905	2,133	2,304	2,465	
Other Expenses	5,008	4,999	6,249	7,186	7,690	
EBITDA	6,530	7,312	8,833	9,649	10,916	
EBITDA Margin	14.7%	12.7%	14.8%	15.2%	16.1%	
EBITDA Growth	26.0%	12.0%	20.8%	9.2%	13.1%	
Depn. & Amort.	1,209	1,367	1,626	2,096	2,306	
EBIT	5,321	5,945	7,207	7,554	8,610	
Other Income	286	406	58	33	168	
Finance Cost	291	534	800	730	660	
PBT before Excep. & Forex	5,316	5,817	6,465	6,856	8,119	
Excep. & Forex Inc./Loss(-)	0	0	0	0	0	
PBT	5,316	5,817	6,465	6,856	8,119	
Taxes	1,052	1,395	1,616	1,714	1,948	
Extraordinary Inc./Loss(-)	0	0	0	0	0	
Assoc. Profit/Min. Int.(-)	0	0	0	0	0	
Reported Net Profit	4,263	4,422	4,849	5,142	6,170	
Adjusted Net Profit	4,263	4,422	4,849	5,142	6,170	
Net Margin	9.6%	7.7%	8.2%	8.1%	9.1%	
Diluted Share Cap. (mn)	377.0	377.0	377.0	377.0	377.0	
Diluted EPS (INR)	11.3	11.7	12.9	13.6	16.4	
Diluted EPS Growth	35.8%	3.7%	9.7%	6.1%	20.0%	
Total Dividend + Tax	189	2,074	1,885	1,885	1,885	
Dividend Per Share (INR)	0.5	5.5	5.0	5.0	5.0	

Source: Company, JM Financial

Balance Sheet		(INR mn)				
Y/E March	FY22A	FY23A	FY24E	FY25E	FY26E	
Shareholders' Fund	26,140	28,302	31,265	34,523	38,808	
Share Capital	378	378	378	378	378	
Reserves & Surplus	25,762	27,924	30,888	34,145	38,430	
Preference Share Capital	0	0	0	0	0	
Minority Interest	82	91	91	91	91	
Total Loans	6,840	9,430	11,430	10,430	9,430	
Def. Tax Liab. / Assets (-)	2,763	2,561	2,561	2,561	2,561	
Total - Equity & Liab.	35,825	40,384	45,347	47,605	50,890	
Net Fixed Assets	25,140	34,205	36,079	37,983	40,077	
Gross Fixed Assets	23,460	25,115	39,915	43,915	48,315	
Intangible Assets	52	52	52	52	52	
Less: Depn. & Amort.	5,066	6,226	7,852	9,947	12,253	
Capital WIP	6,693	15,264	3,964	3,964	3,964	
Investments	3,705	554	554	554	554	
Current Assets	19,003	19,570	23,689	24,759	26,717	
Inventories	6,039	5,714	8,149	8,701	9,290	
Sundry Debtors	11,051	11,107	12,223	13,051	13,935	
Cash & Bank Balances	1,186	402	970	661	1,144	
Loans & Advances	5	5	5	5	5	
Other Current Assets	722	2,342	2,342	2,342	2,342	
Current Liab. & Prov.	12,022	13,945	14,974	15,692	16,458	
Current Liabilities	10,020	10,309	11,338	12,056	12,822	
Provisions & Others	2,002	3,636	3,636	3,636	3,636	
Net Current Assets	6,981	5,625	8,715	9,068	10,259	
Total - Assets	35,825	40,384	45,347	47,605	50,890	

Source: Company, JM Financial

Cash Flow Statement		(INR mn)				
Y/E March	FY22A	FY23A	FY24E	FY25E	FY26E	
Profit before Tax	5,316	5,817	6,465	6,856	8,119	
Depn. & Amort.	1,209	1,367	1,626	2,096	2,306	
Net Interest Exp. / Inc. (-)	283	521	800	730	660	
Inc (-) / Dec in WCap.	-2,644	-731	-2,522	-662	-707	
Others	-224	-276	0	0	0	
Taxes Paid	-1,036	-1,658	-1,616	-1,714	-1,948	
Operating Cash Flow	2,904	5,041	4,752	7,306	8,429	
Capex	-3,062	-8,959	-3,500	-4,000	-4,400	
Free Cash Flow	-158	-3,918	1,252	3,306	4,029	
Inc (-) / Dec in Investments	0	0	0	0	0	
Others	-2,345	3,440	0	0	0	
Investing Cash Flow	-5,407	-5,519	-3,500	-4,000	-4,400	
Inc / Dec (-) in Capital	3,901	0	0	0	0	
Dividend + Tax thereon	0	0	0	0	0	
Inc / Dec (-) in Loans	770	2,590	2,000	-1,000	-1,000	
Others	-2,504	-2,896	-2,685	-2,615	-2,545	
Financing Cash Flow	2,167	-306	-685	-3,615	-3,545	
Inc / Dec (-) in Cash	-336	-784	568	-309	483	
Opening Cash Balance	1,522	1,186	402	970	661	
Closing Cash Balance	1,186	402	970	661	1,144	

Source: Company, JM Financial

Dupont Analysis		FY22A	FY23A	FY24E	FY25E	FY26E
Y/E March						
Net Margin		9.6%	7.7%	8.2%	8.1%	9.1%
Asset Turnover (x)		1.4	1.5	1.4	1.3	1.4
Leverage Factor (x)		1.4	1.4	1.5	1.4	1.4
RoE		18.7%	16.2%	16.3%	15.6%	16.8%

Key Ratios		FY22A	FY23A	FY24E	FY25E	FY26E
Y/E March						
BV/Share (INR)		69.3	75.1	82.9	91.6	102.9
ROIC		15.4%	13.0%	13.7%	13.3%	14.5%
ROE		18.7%	16.2%	16.3%	15.6%	16.8%
Net Debt/Equity (x)		0.2	0.3	0.3	0.3	0.2
P/E (x)		18.9	18.2	16.6	15.7	13.1
P/B (x)		3.1	2.9	2.6	2.3	2.1
EV/EBITDA (x)		13.2	12.3	10.3	9.3	8.1
EV/Sales (x)		1.9	1.6	1.5	1.4	1.3
Debtor days		91	70	75	75	75
Inventory days		50	36	50	50	50
Creditor days		88	69	76	77	77

Source: Company, JM Financial

History of Recommendation and Target Price

Date	Recommendation	Target Price	% Chg.
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Recommendation History



APPENDIX I

JM Financial Institutional Securities Limited

Corporate Identity Number: U67100MH2017PLC296081

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Rating	Meaning
Buy	Total expected returns of more than 10% for stocks with market capitalisation in excess of INR 200 billion and REITs* and more than 15% for all other stocks, over the next twelve months. Total expected return includes dividend yields.
Hold	Price expected to move in the range of 10% downside to 10% upside from the current market price for stocks with market capitalisation in excess of INR 200 billion and REITs* and in the range of 10% downside to 15% upside from the current market price for all other stocks, over the next twelve months.
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* REITs refers to Real Estate Investment Trusts.

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