



Industry Report On Consumer Electrical Industry in India

04th May 2023



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1. Overview of Global and Indian Economy

Macroeconomic Overview - GDP and GDP Growth

India is ranked fifth in the world in terms of nominal gross domestic product (“GDP”) for Fiscal 2022 and is the third largest economy in the world in terms of purchasing power parity (“PPP”). India is expected to become an approximately US\$ 5 trillion economy by Fiscal 2026 and the third largest economy by Fiscal 2030 surpassing Germany and Japan.

Exhibit 1.1: GDP at current prices (In US\$ trillion) and GDP ranking of key global economies (calendar year (“CY”) 2021)

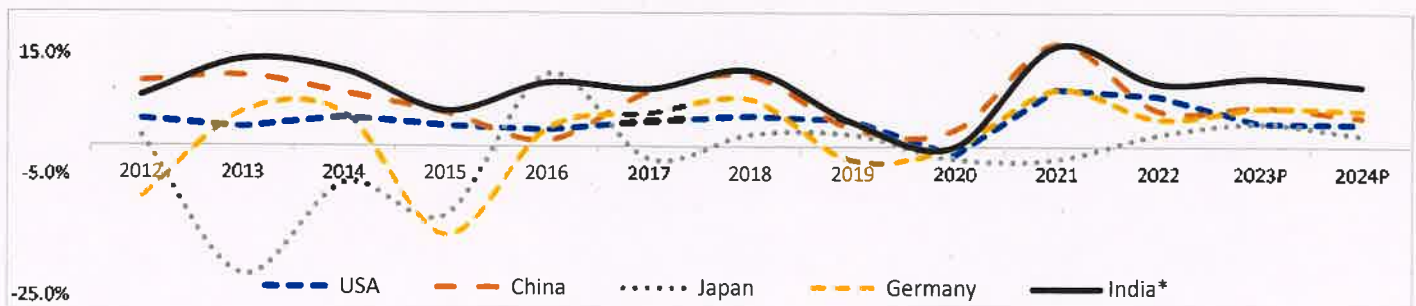
Country	Rank in GDP (CY 2021)	Rank in GDP (PPP)	CY 2010	% Share	CY 2015	% Share	CY 2021	% Share	CY 2024P	CAGR (2010-2021)	CAGR (2021-2024P)
USA	1	2	15	22.5%	18.2	24.2%	23.3	24.1%	27.4	4.1%	5.6%
China	2	1	6.1	9.2%	11.1	14.8%	17.7	18.3%	21.1	10.2%	6.0%
Japan	3	4	5.7	8.6%	4.9	5.9%	4.9	5.1%	5.3	-1.4%	2.7%
Germany	4	5	3.4	5.1%	3.7	4.5%	4.3	4.5%	5.1	2.2%	5.9%
India	5	3	0.9	1.4%	1.6	2.3%	3.0	3.1%	4.2	11.6%	11.9%
UK	6	10	2.5	3.8%	2.6	3.9%	2.9	3.0%	3.4	1.4%	5.5%
Brazil	12	8	2.2	3.3%	1.8	2.4%	1.6	1.7%	2	-2.9%	7.7%
Russia	11	6	1.5	2.3%	1.4	1.9%	1.8	1.9%	1.9	1.7%	1.8%
World	-	-	66.6	-	75.2	-	96.5	-	111.9	3.4%	5.1%

Source: World Bank Data, IMF, RBI, Technopak Analysis. CY 2021 for India refers to Fiscal 2022 data and so on.

India’s nominal GDP has grown at a compounded annual growth rate (“CAGR”) of 11.6% between CY 2010 and CY 2021 and is expected to continue the trend by growing at a CAGR of 11.9% between CY 2021 and CY 2024.

From Fiscal 2010 until Fiscal 2021, the Indian economy’s growth rate has been more than twice as that of the world economy and it is expected to sustain this growth momentum in the long term. India’s nominal GDP grew by 16.7% in Fiscal 2022 followed by a 10.4% growth in Fiscal 2023 and is expected to grow further and reach US\$ 4.2 trillion by Fiscal 2025. Between Fiscal 2022 and Fiscal 2025, India’s real GDP is expected to grow at a CAGR of 6.5%, which compares favorably to the world average (2.7%) and with other major economies, including China (4.0%), UK (1.4%), Japan (1.4%), Germany (0.6%) and the USA (1.1%) for the period between CY 2021 and CY 2024. It is also expected that the growth trajectory of the Indian economy will enable India to be among the top 3 global economies by Fiscal 2030. Several factors are likely to contribute to its economic growth in the long run. These include favorable demographics, reducing dependency ratio, rapidly rising education levels, steady urbanization, the growing young and working population, information technology (“IT”) revolution, increasing penetration of mobile and internet infrastructure, government policies, increasing aspirations and affordability.

Exhibit 1.2: Nominal GDP growth (%) – US, China, Japan, Germany, India (CY)



Nominal GDP Growth (CY)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023P	2024P
USA	4.3%	3.0%	4.5%	3.3%	2.7%	4.1%	4.9%	4.2%	-1.4%	9.4%	8.3%	3.8%	3.6%
China	10.6%	11.5%	8.6%	5.4%	0.9%	8.9%	11.5%	2.8%	2.7%	16.9%	5.9%	6.5%	4.7%
Japan	1.6%	-21.2%	-6.1%	-11.4%	12.0%	-2.0%	2.0%	2.0%	-2.0%	-2.0%	2.0%	3.8%	1.9%
Germany	-8.6%	5.4%	5.1%	-14.7%	2.9%	5.4%	7.5%	-2.6%	0.0%	9.3%	4.4%	6.3%	5.9%
India*	8.3%	14.3%	12.5%	5.9%	10.5%	9.5%	12.5%	4.0%	0.0%	16.7%	10.4%	11.4%	10.0%

Source: India Data from RBI, other countries data from World Bank, Future growth rate from OECD Data, Technopak Analysis; *For India, CY 2012 represents Fiscal 2013 and so on.



Per Capita Income Growth

Income growth, presented by Gross National Income (“GNI”) is defined as the total amount of money earned by a country’s businesses and individuals. While India’s gross national income grew at a CAGR of 8.1% for the period Fiscal 2015 to Fiscal 2022, GNI per capita for countries such as USA, China, Japan, Germany and UK grew at a CAGR of 3.5%, 6.9%, -0.6%, 0.9% and 0.0% between CY 2014 and CY 2021. India’s GNI is expected to continue the growth momentum with a CAGR of 12.6% from Fiscal 2022 to Fiscal 2025. Growing GNI is one of the strongest drivers for higher private consumption trends. The GNI per capita for the top five economies of the world for CY 2021 was USA (US\$ 70,930), China (US\$ 11,880), Japan (US\$ 42,650), Germany (US\$ 51,200) and the UK (US\$ 44,480) as compared to India’s GNI of US\$ 2,128 (₹ 170,222) for a similar period of Fiscal 2022.

Exhibit 1.3: India's GNI Per Capita (₹) (Current Prices) and year-on-year (“Y-o-Y”) growth trend (%) in Fiscal Year



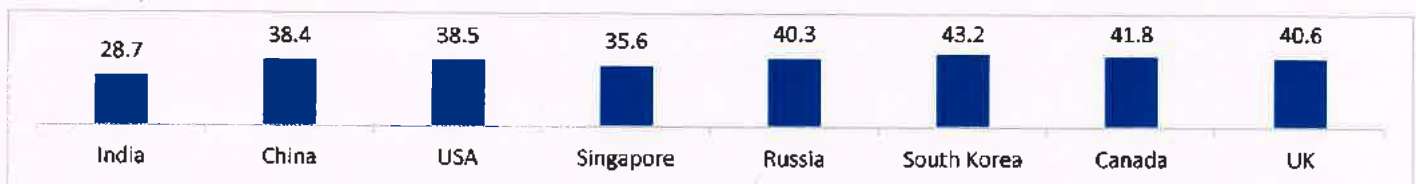
Source: RBI, IMF projections

Key characteristics of the Indian economy

1. Demographic profile of India

India has one of the youngest populations globally compared to other leading economies. The median age in India is estimated at 28.7 years for Fiscal 2022 as compared to 38.5 years and 38.4 years in the United States and China, respectively, and is expected to remain under 30 years until Fiscal 2030. With a growing young population, the demand for premiumization is also growing. With more young people joining the workforce and earning higher salaries, there is a corresponding increase in disposable incomes, and hence the ability to afford premium products and services.

Exhibit 1.4: Median Age (in years): Key Emerging and Developed Economies in (CY 2022)



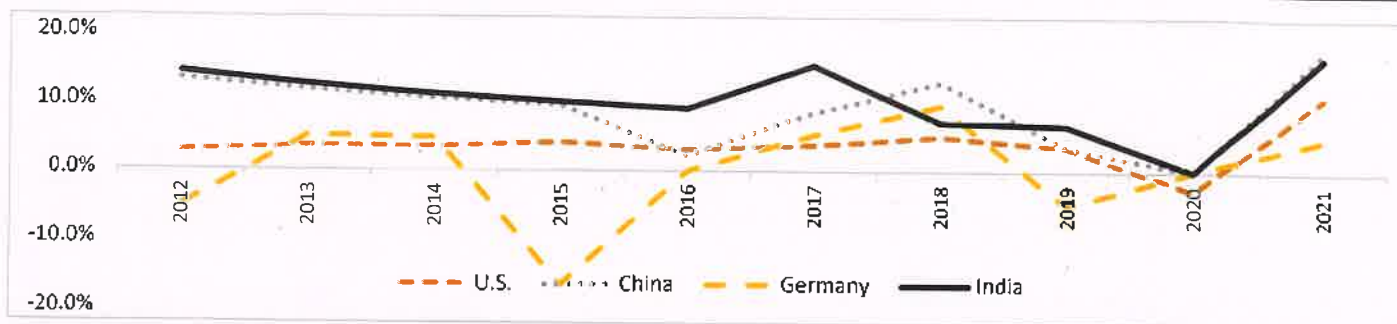
Source: World Population Review, Technopak Analysis

India is the second most populated country in the world, home to 1.4 billion people which is about one sixth of the world’s population as on CY 2022. 54% of the total population is between 15 to 49 years while 80% of the population is below 50 years old. This indicates that India’s youth and working age population contribute to the positive demographics.

2. Private Consumption

GDP growth in India is expected to be driven by rising private final consumption expenditure. India is a consumption driven economy where the share of domestic consumption is measured as private final consumption expenditure (“PFCE”). This private consumption expenditure comprises both goods (such as food, lifestyle, home and pharmacy) and services (such as food services, education and healthcare). A high share of private consumption to GDP has the advantage of insulating India from volatility in the global economy. It also implies that sustainable economic growth directly translates into sustained consumer demand for goods and services. India’s domestic consumption has grown at a CAGR of 7.3% between Fiscal 2016 and Fiscal 2021, compared to 2.8% and 4.7% in the USA and China, respectively during the similar period of CY 2015 and CY 2020.

Exhibit 1.5: Private Final Consumption Expenditure Growth (%) (CY)



Private Final Consumption Expenditure growth (%) (CY)

Country	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
U.S.	2.7%	3.5%	3.4%	4.1%	3.1%	3.8%	5.0%	3.5%	-2.9%	10.8%
China	13.3%	11.8%	10.5%	9.5%	2.3%	8.5%	13.0%	3.6%	0.0%	17.6%
Germany	-5.3%	5.0%	4.8%	-16.7%	0.0%	5.3%	9.5%	-5.0%	0.0%	4.8%
India*	14.3%	12.5%	11.1%	10.0%	9.1%	15.4%	7.1%	6.7%	0.0%	16.7%

Country	Private Final Consumption Expenditure Contribution to GDP	
	2019	2021
U.S.	67.4%	68.3%
China	39.2%	38.9%
Germany	51.7%	49.6%
India*	60.1%	59.6%
Japan	74.5%	75.3%

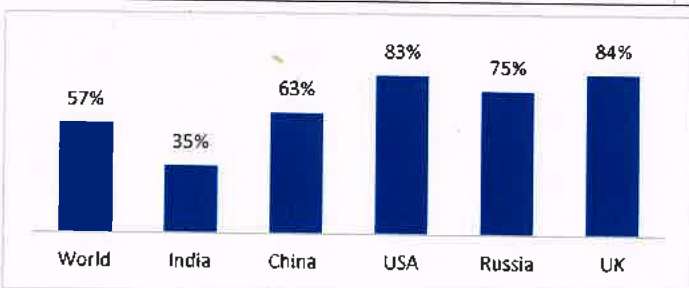
Source: World Bank, RBI, Technopak Research & Analysis

* For India, CY 2012 refers to Fiscal 2013 and so on, India Data in Fiscal Year. 1US\$ = ₹ 80

3. Urbanization

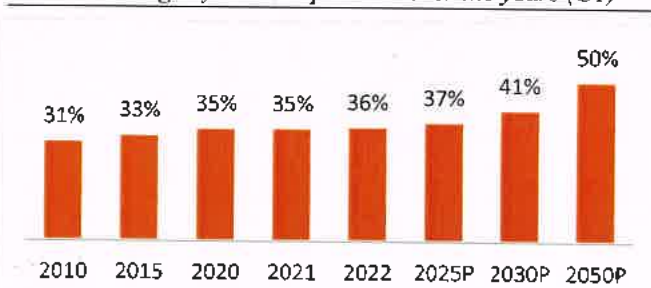
Urbanization is one of the most important pillars of India's growth story as these areas are the core drivers for consumption. India had the second largest urban population in the world in absolute terms at 493 million in CY 2021, second only to China. However, only 35% of India's population is classified as urban compared to a global average of approximately 57%. It is the pace of India's urbanization that is a key trend fueling India's economic growth. Currently urban population contributes 63% of India's GDP. Going forward, it is estimated that 37% (541 million) of India's population will be living in urban centers by Fiscal 2025. This trend is expected to continue with approximately 41% and 50% of India's population expected to be living in urban centers by Fiscal 2030 and Fiscal 2050 respectively. India is the second largest urban system in the world with approximately 11% of the total global urban population living in its cities.

Exhibit 1.6: Urban Population as Percentage of Total Population of Key Economies (CY 2021)



Source: World Bank

Exhibit 1.7: India's increasing Urban Population as a Percentage of Total Population over the years (CY)



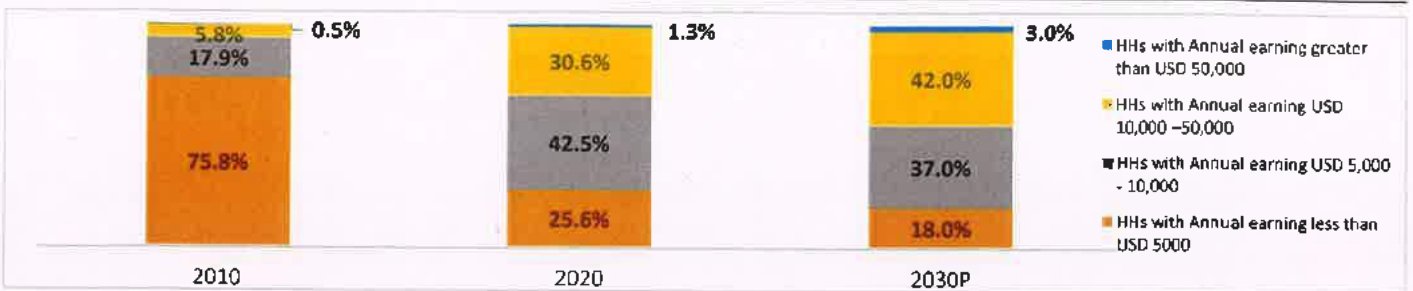
Source: Technopak Analysis

4. Growing Middle Class

Increase in number of households with annual earnings of US\$ 10,000 to US\$ 50,000 is expected to drive the Indian economy due to demand of, among other things, more goods, better services, houses, health and education. Households with an annual income

between US\$ 10,000 and US\$ 50,000 formed a minority stake of 5.8% of the total population in Fiscal 2010. This share increased to 30.6% in Fiscal 2020 and is expected to continue the growth momentum and increase to 42% of the total population by Fiscal 2030. Due to the growing middle-class sector in India, there is an increasing appetite for premiumization of goods and services, construction, housing services, financial services, telecommunications and retail.

Exhibit 1.8: Household (“III”) Annual Earning Details



Source: EIU, Technopak Estimates

5. Nuclearization

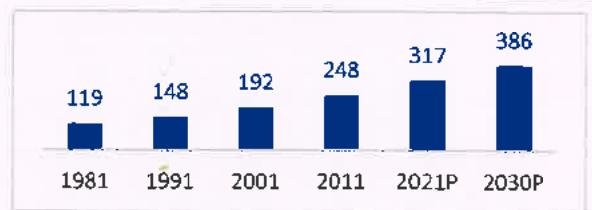
The growth in the number of households exceeds the rate of population growth, which indicates an increase in nuclearization in India. The average household size has reduced from 5.3 in Fiscal 2001 to 4.2 in Fiscal 2021 and is further projected to reduce to 3.9 by Fiscal 2030. 69% of households had less than five members in Fiscal 2011 as compared to 62% in Fiscal 2001. Growth in the number of nuclear families is leading to an increase in the number of households, thereby creating a strong demand for housing units and discretionary expenditure in India.

6. Digitization

COVID-19 pandemic has accelerated the pace of technology adoption and digitization across enterprises and has transformed the way technology is perceived. Digitization in India is expected to grow continuously, which is expected to be driven by the affordability of accessing the internet, continuous improvement in telecommunications infrastructure, increase in consumption of data, increased adoption from Tier II and III cities, rising popularity of social media and growing trust and adoption of online payment platforms.

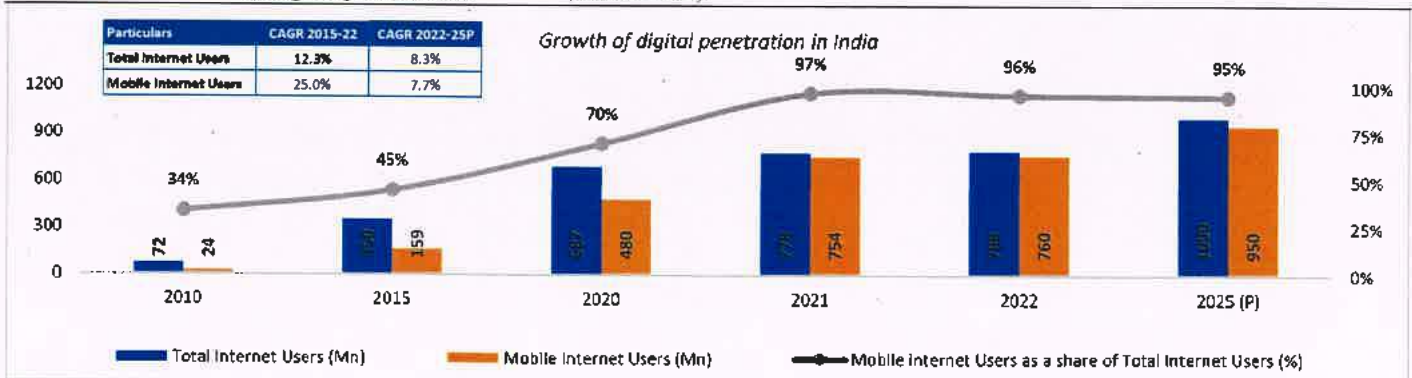
In this report, the following city type classification nomenclature has been considered: Metro - Delhi NCR & Mumbai, Mini Metro - Next 6 cities with population more than 5 million. (Ahmedabad, Bengaluru, Chennai, Hyderabad, Kolkata & Pune), Tier I - Cities with population between 1million and 5 million, Tier II - Cities with population between 0.3million and 1 million, Tier III - Cities with population below 0.3million.

Exhibit 1.9: Total number of households in India (In million)



Source: Census, Technopak Analysis : Note: Decadal growth for period 2021-2030P reflects a 9-year period

Exhibit 1.10: Growth of digital penetration in India (Fiscal Year)



Source: TRAI, Technopak Analysis, Secondary Research

Urbanization and nuclearization is expected to increase the demand for residential real estate in India, which in turn, is expected to generate demand for electrical products as each house would require, among other things, electrical appliances, wirings, fans and lights. India’s youth and working age population, accompanied by rise in per capita income is expected to drive premiumization in fast moving electrical goods (“FMEG”) segments such as fans, lightings and home appliances. Additionally, the pace at which technology adoption and digitization is happening across India, due to factors such as improvement in telecommunications

infrastructure and increase in data consumption, is expected to increase the demand for wires and cables (“W&C”) such as communication cables in India.

The Government of India (“GOI”) has announced policies aimed at boosting GDP, increasing the share of manufacturing in India and economic growth, thereby boosting electricity consumption by the industrial segment in India. GOI has also announced various schemes to revive power infrastructure, improve urban distribution networks such as Integrated Power Development Scheme (“IPDS”) and boost rural electrification. Government initiatives in housing and infrastructure sectors like Pradhan Mantri Awas Yojana (“PMAY”) and PM Gati Shakti National Master Plan (“NMP”) will likely increase the demand for electrical products in India. Construction of Multimodal logistics parks (“MMLPs”) is expected to increase the demand for wires and cables such as flexible cables, control and instrumentation cables, and construction of newly built houses is expected to drive the demand for housing wires and other FMEG products.

2. Consumer Electrical Industry in India

Market Overview

India is the third largest producer and the second largest consumer of electricity in the world. Consumer electrical industry* is one of the important aspects of the Indian economy, contributing approximately 8% to the country's manufacturing production, approximately 1.5% to India's GDP and approximately 1.5% to India's exports. Consumer electrical industry entails heavy electrical products such as W&C and light electrical products such as FMEG. A wire is a single conductor, whereas a cable is a group of conductors, used for, among other things, transmitting electricity and telecommunication signals. FMEG includes electrical goods and appliances such as fans, lightings, electric heaters, and other household appliances.

*Consumer electrical industry comprises of wires and cables, FMEGs, transformers, boilers etc. In this report the focus has been on wires and cables and FMEGs.

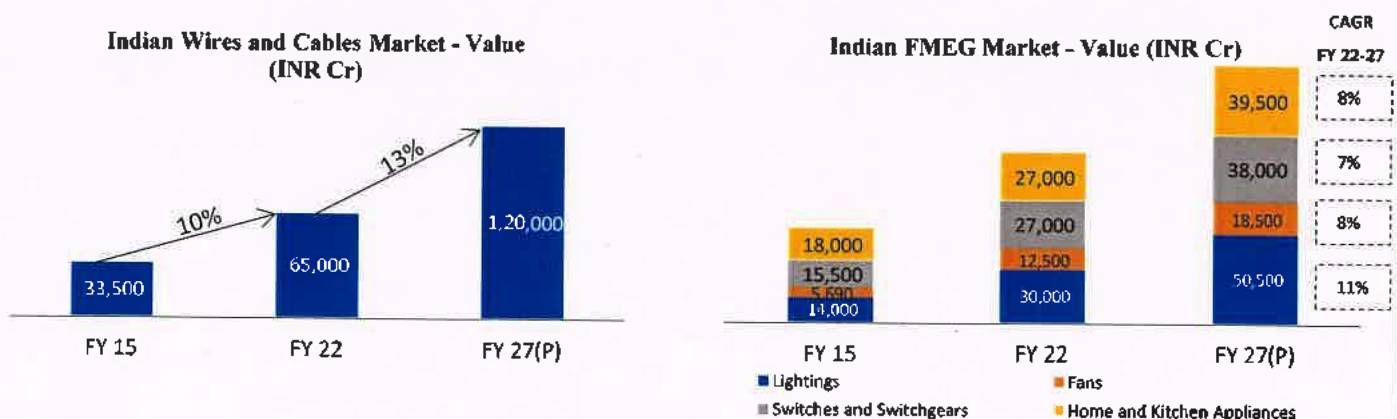
The consumer electrical industry consisting of W&C and FMEGs was estimated at approximately ₹ 1,61,500 crore in Fiscal 2022 and is expected to grow at a CAGR of approximately 11% till Fiscal 2027 to reach a market value of approximately ₹ 2,66,500 crore. The industry is highly competitive with the presence of many national and regional players (manufacturers, traders, suppliers, and importers etc.), competing on the basis of factors such as products, price, customer service, post sales services, quality and delivery. Key players in W&C industry like RR Kabel are expanding into FMEG segment because of its high adjacency with established W&C segment. They seek to grow and strengthen their market position in FMEG market in India and abroad by leveraging their brand's recall and existing distribution network, including electricians.

W&C primarily used for distribution and transmission of electrical power are an important constituent, representing nearly 40% of the W&C and FMEG industry in India. In Fiscal 2022, the total domestic market for W&C industry was estimated at approximately ₹ 65,000 crore, which is expected to grow at a CAGR of 13% till Fiscal 2027 to reach a market value of approximately ₹ 1,20,000 crore.

In Fiscal 2022, the total domestic market for FMEG industry was estimated at approximately ₹ 96,500 crore, representing approximately 60% of the total consumer electrical industry. This is expected to grow at a CAGR of 9% till Fiscal 2027 to reach a market value of approximately ₹ 1,46,500 crore.

Rural electrification, increase in absorption of residential and commercial real estate, increase in per capita consumption of electricity, Government of India's ("GoI") infrastructure development support through increased capital outlay and government funded schemes, favorable trade policies to increase exports through initiatives such as production linked incentive ("PLI") and Remission of Duties and Taxes on Exported Products ("RoDTEP") schemes, successful execution of Bureau of Energy Efficiency ("BEE") star norms and increase in demand from consumers to upgrade or replace existing products are some of the key factors, that are expected to drive the growth of the consumer electrical industry in India.

Exhibit 2.1: Indian W&C and FMEG Market – By Value (₹ in crore) in Fiscal Year



Source – Primary Research, Secondary Research and Technopak Analysis

Note-This does not include exports.

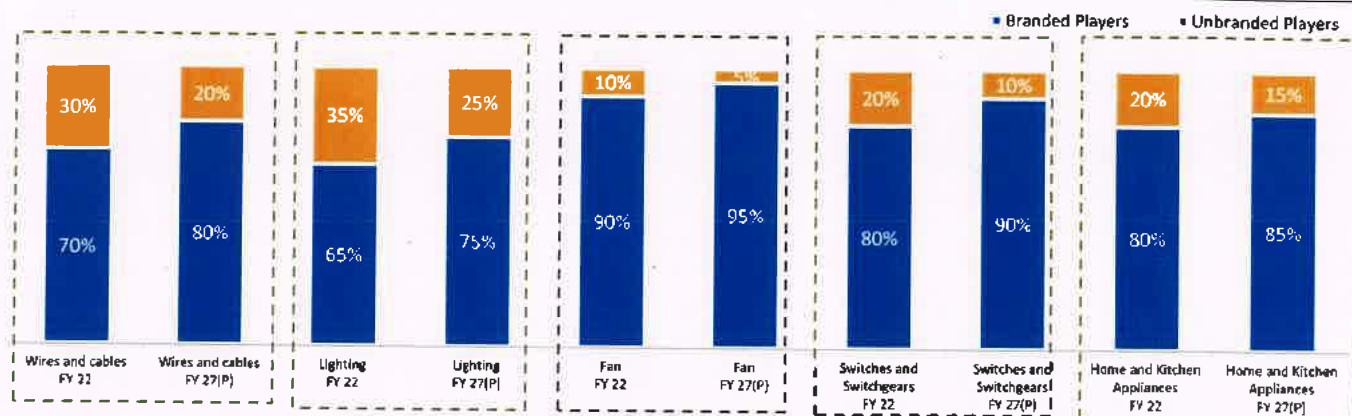
Home appliances constitute 28% and kitchen appliances constitute 72% of the Indian home and kitchen appliances market in Fiscal 2022.

Exhibit 2.2: Total Market and Branded Market of FMEG – by Value (₹ in crore) in Fiscal Year

Segment	Category	Total Market Fiscal 2022	Share of Branded Fiscal 2022	Branded market Fiscal 2022	Total Market Fiscal 2027 (P)	Share of Branded Fiscal 2027 (P)	Branded Market Fiscal 2027 (P)	CAGR of Branded Market (Fiscal 2022-2027)

W&C	Wires and Cables	65,000	70%	45,500	1,20,000	80%	96,000	16%
FMEG	Lighting	30,000	65%	19,500	50,500	75%	37,875	14%
	Fan	12,500	90%	11,250	18,500	95%	17,575	9%
	Switches and Switchgears	27,000	80%	21,600	38,000	90%	34,200	10%
	Home and Kitchen appliances	27,000	80%	21,600	39,500	85%	33,575	9%

Exhibit 2.3: Share of Branded Play in Indian W&C and FMEG market – By Value (Fiscal Year)



Source – Technopak Analysis

In Wires and Cables segment, the Total Addressable Market (“TAM”) for leading brands like RR Kabel, Polycab, KEI etc. is approximately ₹ 45,500 crores as of Fiscal 2022, which is projected to reach approximately ₹ 96,000 crores by Fiscal 2027. In FMEG segment, the TAM for leading brands such as Havells and Crompton Greaves and challenger brands such as RR Kabel and Polycab is approximately ₹ 74,000 crore as of Fiscal 2022, which is projected to reach approximately ₹ 1,24,000 crore by Fiscal 2027. As of Fiscal 2022, the FMEG product portfolios of leading players in W&C industry like RR Kabel covers approximately 77% of the FMEG industry market size in India by value.

Trends shaping W&C and FMEG industry in India

Shift towards Branded Play

The domestic W&C and FMEG industry is pivoting towards branded play. The share of branded play in domestic W&C and FMEG industry has grown from 60% in Fiscal 2015 to approximately 75% in Fiscal 2022 and is projected to reach approximately 82% by Fiscal 2027. This consolidation of branded play is driven both by demand and supply side factors:

Demand side factors

Rising Awareness among consumers towards safety and quality: There has been a growing awareness among the consumers to seek safety and quality in electrical products. Given products’ interface involve electricity and electricals, there is a heightened consumer awareness about branded play being a proxy for trust, quality, and safety. Thus, customers across income segments have increasingly started to prefer branded products over unbranded products. This consumer behavior has led the electrical products market to get pivoted towards branded play.

Supply side factors

Goods and service tax (“GST”) Regime: With the advent of the GST regime, complete transparency of the entire go-to-market value chain (from manufacturer to retailers) has become a key imperative. This has disincentivized trade practices like under-reporting of production and sales, non-billed transactions and non-compliant behavior. Furthermore, the input tax credit for taxes paid at different stages of value chain has made trade of branded play acceptable and GST compliance has increased the input cost for unbranded players. These factors have narrowed the price gap between branded and unbranded products, consequently creating favorable market conditions for branded players to increase their share in the overall market.

Technological interventions: Continuous product improvement in W&C and FMEG industry, owing to technological interventions and innovations by branded players have made it difficult for unbranded players to compete. Innovations like Low-Smoke Zero-Halogen (“LSZH” or “LSOH”) technology in wires and cables and premiumization in FMEGs have created favorable product differentiation for the branded players in the market.

Premiumization

The FMEG industry in India is witnessing increased demand for premium products as consumers are showing a rising interest towards smart, easy-to-use, and technologically advanced products. An increase in disposable income has increased the purchasing power of customers, which in turn, has accelerated the demand for premium products in India. “Smart”, “technological enablement” and “plug and play systems” are used as proxies for premiumization among FMEG products and are considered as lifestyle choices. All these factors are driving the FMEG industry towards the premium segment.

W&C and FMEG Industry – Key characteristics

1) Direct Consumer Sales Activation

Brands distribute and sell electrical products in three ways:

1. Increase in reach through distributors, dealers, and retailers
2. On site involvement of the sales team to generate leads
3. Through a brand’s own stores, exclusive brand outlets (“EBOs”) and modern brick and mortar stores

Exhibit 2.4: Different ways of Sales Activation in W&C and FMEG Industry

Sales Channel	Sales Activation	Share (in %)
Distribution Led	Distributors and Retailers	50%-55%
	Sales Team	40-45%
Direct Company Led	Brand’s exclusive stores	5%

Source – Technopak Analysis

In 1990s, 80-90% of the sale in W&C and FMEG industry was dependent on the distributors and retailers and brands had limited visibility on the distributor’s sales to retailer’s sales and to consumers. Currently, approximately 45% of the sale is captured by the sales team and routed to the distributors and retailers, approximately 50% of the sale is dependent on the distributors / retailers and approximately 5% sales take place through a brand’s exclusive store. Companies in the consumer electrical industry have adopted an aggressive stance towards direct selling to customers on-site, including electricians, who are the key decision makers in this industry. This change in sales activation has resulted in certain benefits for companies in the consumer electrical industry such as, crowding out trade labels (which are local or regional brands), harnessing opportunistic selling behavior, de-risking the dependence on dealers and retailers, consolidating brand image through customer engagement, and providing below the line (“BTL”) marketing support for above-the-line (“ATL”) investments undertaken through building a network of influencers such as electricians. Additionally, sales through exclusive stores have increased direct consumer engagement, brand visibility and premiumization.

2) Marketing Initiatives through ATL and BTL

a) ATL focused brand building

ATL marketing remains core to building the brand in the W&C and FMEG industry. These companies use a combination of all media such as television, print, outdoor –billboards, movie theatres and digital media. Celebrity endorsements play a key role in these campaigns. Most of these campaigns are sharply focused on safety, durability, energy efficiency, design and functionality. Leading players in the consumer electrical industry like RR Kabel are spending close to 40% of its marketing investments on ATL initiatives such as celebrity endorsements, sponsoring Pro Kabaddi and IPL teams.

Exhibit 2.5: Marketing / Brand campaign themes for different electrical product categories

Product Category	Theme of Marketing / Brand Campaigns
W&C	Safety and durability
Lightings	Value economics, cost of purchase, longevity, energy saving, brightness
Fans	Energy efficiency, design and functionality, value economics
Switches and switchgears	Safety and design

b) BTL Initiatives

Various companies in the consumer electrical industry undertake BTL marketing initiatives to increase brand awareness and consumer recall of their products. BTL line activities include sales promotion, visual merchandising, direct marketing, leaflets and countertop units. Key players like RR Kabel spend approximately 60% of its marketing investments on BTL initiatives such as loyalty management program (RR Connect App) for electricians and Kabel Link (educating architects and electrical consultants

about their product portfolio) to create a network of influencers such as electricians, thereby creating enhanced brand awareness and visibility.

3) Combination of In-house and Outsourcing

Within W&C and FMEG industry, players undertake a combination of in-house and outsourcing strategy. Product sourcing is done through a mix of the player manufacturing its own products, importing its products and outsourcing the manufacturing of its products to third parties. While players such as RR Kabel and KEI have backward integrated their W&C manufacturing facilities by manufacturing certain raw materials such as PVC compounds in-house so as to have better control and visibility on the quality of product, players in lightings industry rely on import of finished goods and players in the home and kitchen appliances use a combination of outsourced and in-house manufacturing.

Exhibit 2.6: In-house vs Outsourcing for different players in Consumer Electrical Industry

Category	In-house Manufacturing	Third party manufacturing	Imports	Remarks
W&C	✓✓✓	✓	✓	Largely manufactured in-house with limited third-party manufacturing and imports
Lightings	✓	✓	✓✓✓	Components are imported from China / Korea, followed by assembly of the product by the brand or vendors in India
Switches and switchgears	✓	✓✓		In-house manufacturing with vendor relationship within India
Fans	✓✓	✓	✓	Largely manufactured in house with some third-party manufacturing ("OEMs") and limited imports
Home and kitchen appliances	✓✓	✓✓	✓✓	Combination of in-house and third-party manufacturing and imports.

Source – Secondary research, Technopak Analysis, ✓✓✓ - High presence, ✓✓ - Medium presence, ✓ - Low presence

Exhibit 2.7: Estimated In-house vs outsourcing share for different players in Consumer Electrical Industry (Fiscal 2022)

Companies	In-house Manufacturing (%)	Outsourced (%)
RR Kabel	96%	4%
Havells	90%	10%
Polycab	91%	9%
KEI	95%	5%
Finolex	96%	4%
V-Guard	40%	60%
Crompton	65%	35%
Bajaj Electricals	NA	NA

Source – Annual Reports, Secondary research, and Technopak Analysis, NA-Not Available

Key Growth Drivers of Consumer Electrical Industry in India

There are six key factors supported by a positive macro environment that are expected to provide growth in the W&C and FMEG industry between Fiscals 2022 and 2032:

1. Public and private investment outlay in infrastructure
2. Continued growth of residential real estate sector
3. Resilient commercial real estate sector
4. Transition of automobiles and transport towards electric vehicles ("EVs")
5. Rural electrification
6. Push towards renewable energy

1. Public and private investment outlay in infrastructure

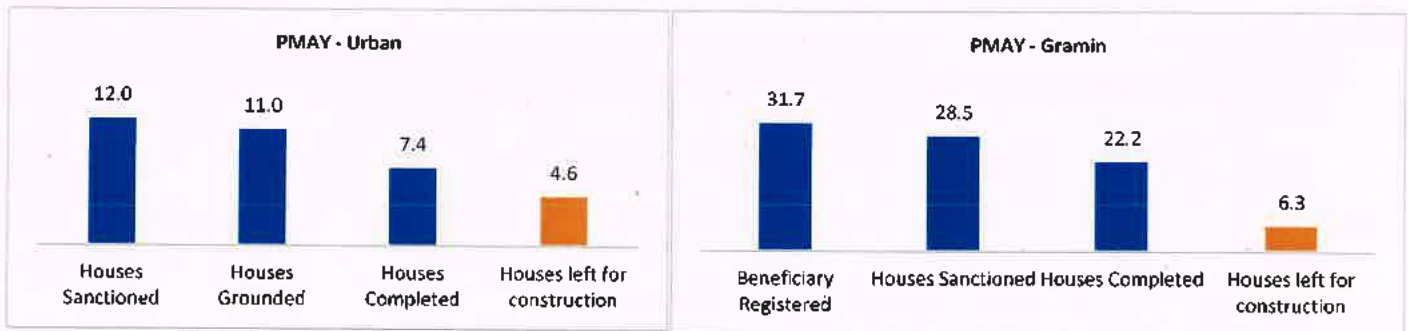
Various policy interventions have been undertaken by GoI in the infrastructure sector to boost India's GDP and economic growth. These initiatives intend to drive the growth of W&C and FMEG industry in India.

- **National Infrastructure Pipeline (“NIP”):** GoI has announced an outlay of approximately ₹ 111 lakh crore in the infrastructure sector between Fiscal 2020 and Fiscal 2025 to help make India a US\$ 5 trillion economy by Fiscal 2026. For Fiscal 2024, the projected infrastructure investments under NIP are around ₹ 15.4 lakh crore.
- **Capex by GoI:** Capital investment of approximately ₹ 10 lakh crore on infrastructure sector (approximately 3.3% of GDP) has been announced by GoI in the Indian union budget 2023-24. Additionally, a capital outlay of ₹ 2.4 lakh crore has been provided for railways. The principal areas identified for capital expenditures include roads, railways and metros, which require high supplies of W&C and FMEG products. With the expansion of transport infrastructure, Technopak expects there to be a corresponding increase in demand for electrical goods such as W&C, lighting and switchgears, thereby creating a market opportunity for W&C and FMEG manufacturers.
- **PMAY:** The GoI under the ‘Housing for All’ scheme, has aimed to build approximately 12 million houses for urban and approximately 28.5 million house in the rural parts of India.

Under PMAY (Urban), the total capital assistance committed by GoI to build approximately 12 million units of houses was approximately ₹ 2.02 lakh crore, of which approximately 7.4 million units of houses have been completed by releasing ₹ 1.14 lakh crore till April 2023 and the remaining approximately 4.6 million units of houses are expected to be completed by CY 2024. Under PMAY (Gramin), the total capital assistance transferred, or fund utilized by the government till April 2023 to build approximately 28.5 million units of houses is approximately ₹ 2.98 lakh crore, of which approximately 22.2 million units of houses have been completed and the remaining approximately 6.3 million units are expected to be completed by CY 2024.

Approximately 11 lakh houses (approximately 4.6 lakh houses in urban and approximately 6.3 lakh houses in rural) are under construction or to be constructed in coming years under the PMAY by CY 2024. Further, the budget outlay for PMAY has been increased by 66% to over ₹ 79,000 crore, as per the Indian union budget 2023-24.

Exhibit 2.8: Supply of Housing under Government Schemes (PMAY – Urban and PMAY – Rural) (in millions)



Source: PMAY

Note: All units in the above chart are in millions

These initiatives are expected to generate demand for W&C such as housing wires, power cables, flexible and specialty cables and for FMEG products like lights, fans, home, and kitchen appliances in the next 5-7 years.

Urbanization and Smart Cities

In the last decade, the urban population in India has grown at an annual rate of 2.4%. The urban population of India is projected to reach approximately 41% by CY 2030 from 31% in CY 2010. Further, the number of metropolitan cities in India are estimated to increase from 46 as per Census 2011 to 68 in CY 2030. Additionally, Smart City project was launched in June 2015 by GoI with a plan to build 100 smart cities across India, having an objective to promote cities that provide core infrastructure, good quality of life to its citizens, a clean and sustainable environment with application of ‘Smart’ solutions. As on December 2, 2022, GoI has released approximately ₹ 34,675 crore as part of Smart City project, of which approximately ₹ 30,418 crore (88%) have been utilized in building smart cities across India. These initiatives are expected to generate demand for electrical products especially in the W&C, switches and switch gear segments in next 5-7 years.

Foreign Direct Investment (“FDI”) and private equity (“PE”) investment in real estate sector

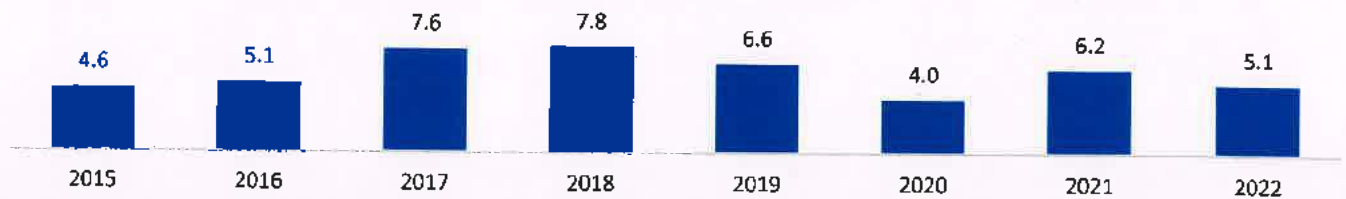
In the past decade and a half, GoI has liberalized the FDI regulations, which has resulted in an increase of foreign investments and economic expansion in the real estate sector. India has an optimistic growth prospect for FDI with a potential to attract FDI flow of US\$ 475 billion in the next five years.

Post implementation of Real Estate Regulatory Authority (RERA) Act and increase in transparency and returns, there has been a surge in private investment in the real estate sector. FDI in the sector (including construction development and activities) stood at

US\$ 55.2 billion from April 2000 to September 2022. In India, Bengaluru is believed to be the most preferred property investment destination for non-resident Indians (“NRIs”), followed by Ahmedabad, Pune, Chennai, Goa, Delhi, and Dehradun.

The investments dropped 17% Y-o-Y in CY 2022 due to inflation risk, rising interest rates, and geopolitical instability. PE investments of US\$ 5.1 billion were received in CY 2022.

Exhibit 2.9: PE investment in Indian real estate over the years (in US\$ billion) (CY)



Source: Technopak Analysis and Secondary Research

With the rise in private investments and FDI inflow in India, Technopak expects there to be a surge in demand of the real estate sector in both the rural and urban areas. Sectors like W&C are expected to experience a boost, as there will be growing need for transmission and distribution lines to supply electricity. Further, with an increase in the number of residential, commercial, and retail units, FMEG products such as fans and lights are expected to see a surge in their demand.

Policy Reforms

Various policy reforms have been incorporated by GoI to boost production, exports and promote ease of doing business. Such interventions are going to boost the demand for wires and cables and FMEG products in India.

- **PLI Scheme:** Under PLI scheme, GoI aims to have large-scale electronics manufacturing in India. ₹ 1.97 lakh crore have been allocated for PLI in Indian union budget 2020-21 for next 5 years, which is expected to boost production by over \$500 billion by FY 26. There is a PLI Scheme specifically for white goods (air conditioners and light emitting diode (“LED”) lights) manufacturers in India under which, GoI proposes a financial incentive to boost domestic manufacturing and attract large investments in white goods manufacturing value chain, with an objective of removing sectoral disabilities, creating economies of scale, enhancing exports, creating a robust component ecosystem and employment generation. This scheme is expected to be implemented over Fiscal 2022 to Fiscal 2029 with a budgetary outlay of ₹ 6,238 crore. A total of 57 firms with committed investment of approximately ₹ 6,000 crore have been provisionally selected as beneficiaries under this scheme.
- **Integrated Power Development Scheme (“IPDS”):** IPDS envisages strengthening of sub-transmission and distribution network including metering at all levels in urban area. Till March 2023, projects worth ₹ 31,314 crore have been sanctioned under IPDS, against which, ₹ 15,922 crore have been released towards projects and ₹ 219 crore released for enabling activities.
- **Export reforms:** Various conducive export policies have been announced by GoI. For example, RoDTEP scheme has been introduced which provides rebates to various central, state, and local duties/ taxes on exported products. Advance Authorization Scheme (“AAS”) and the Export Promotion Capital Goods (“EPCG”) Scheme are being implemented to enable duty free import of raw materials and capital goods for export production.
- **GST Regime:** With the introduction of GST regime, there have been many structural changes to the business scenario such as elimination of cascading tax effect, fewer compliances, simple and online procedure and regulation of unbranded players.

Digitalization

Digitalization is transforming the way businesses work. There has been increased adoption of digital technologies in workplaces. Additionally, various initiatives have been launched by GoI to boost digital infrastructure such as Digital India and Bharatnet, leading to higher demand for internet connectivity and for new age technologies such as 5G. These trends are going to play a significant role in the growth of electrical industry.

- **Bharatnet:** It is one of the biggest rural telecom projects in the world, implemented in a phased manner to all Gram Panchayats (“GPs”) (approximately 2.5 lakh) in India for providing non-discriminatory access to broadband connectivity to all the telecom service providers. As of June 2021, length of optical fiber cable (“OFC”) laid was 5,24,686 kms and number of GPs where OFC laid was 1,72,941.
- **Digital India:** GoI has launched the Digital India program with the vision of transforming India into a digitally empowered society and a knowledge-based economy, by ensuring digital access, digital inclusion, digital empowerment and bridging

the digital divide. Some of the key initiatives under this program are Common Services Centers (“CSCs”) and Digital Village. Till March 2023, 5.2 lakh CSCs, offering over 400 digital services, are functional across India (including urban and rural areas), out of which, 4.1 lakh CSCs are functional at GP level. Approximately 700 GPs / village with at least one GP / village per District per Indian state / union territory (“UT”) are being covered in the Digital Village Pilot Project started in October 2018 by Ministry of Electronics and Information Technology, GoI, where concerned villages would be provided digital services such as digital health services, education services and financial services.

New age sectors

Emergence of new age sectors like the construction of Multimodal logistics parks (MMLPs) as a part of the Gati Shakti National Master Plan, local data centers and airports (airport cables would be required for passenger terminals, escalators etc.) is expected to drive the increase in demand of wires and cables such as flexible cables, control and instrumentation cables etc. and FMEG products in India.

Safety and Energy Efficiency Standards

In order to promote the use of energy efficient products, BEE has introduced voluntary and mandatory star labelling norms for certain electrical product categories. For example, voluntary star labelling program was introduced for ceiling fans in CY 2019, which has been mandated in CY 2023. Introduction of safety standards are also accelerating the shift towards branded play.

2. Continued growth of residential real estate sector

Every newly built residential unit implies not only increased demand for W&C and FMEG products like light, fans and switches, but also creates an installed base for replacement demand for these products.

The demand for residential real estate in India depends on various factors such as population growth, economic conditions, and lifestyle changes. With the rise in population and urbanization, the demand for houses is likely to increase. India is expected to witness the growth in residential real estate market driven by both, the private sector led residential real estate and of government led aimed at affordable housing (PMAY and others).

With the increase in demand for the residential space in both affordable and premium segments, India’s residential market has witnessed a rapid growth in recent years. Residential sales volume across the major cities in India witnessed a 51% annual rise from approximately 2.4 lakhs units sold in CY 2021 to approximately 3.7 lakhs unit sold in CY 2022 signifying a healthy recovery in the sector, post COVID-19 pandemic. The top 7 Indian cities with the highest residential unit sales in CY 2022 are Mumbai, National Capital Region (NCR), Bengaluru, Pune, Chennai, Hyderabad, and Kolkata.

Exhibit 2.10: Supply of Residential House in top 7 cities of India (in Lakhs) (CY)



Source: Secondary Research

The GoI has implemented various reforms in the real estate sector to improve transparency, affordability, and accessibility of housing such as RERA and affordable housing policies which has significantly increased the confidence of the home buyers and investors. Further, the introduction of GST has simplified the tax structure for the real estate sector, reducing the overall tax burden on home buyers. There are many more such housing board schemes being run by Indian state governments. These combined efforts of both the central and state governments to facilitate a greater number of residential houses is expected to continuously create and increase demand for W&C and FMEG products in the coming years.

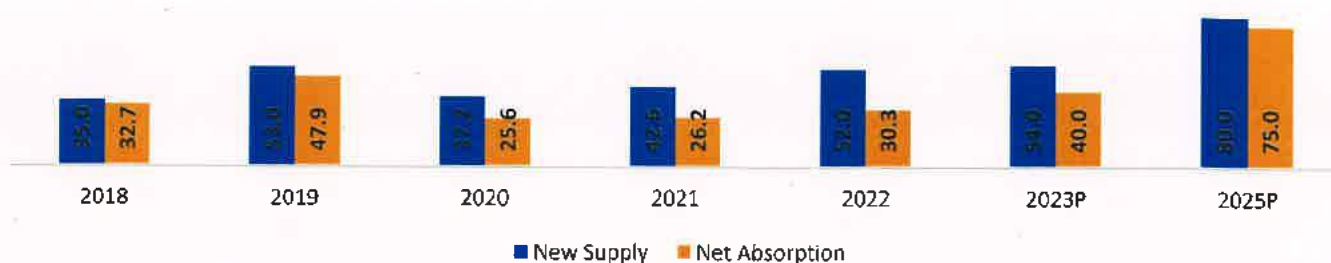
3. Resilient commercial real estate sector

The commercial property market is estimated to expand at a CAGR of almost 13% from the projected period of the CY 2022 to CY 2027. The commercial real estate sector mainly comprises of office space, retail space, data center space in both owned and leased premises.

Office space

Office spaces are a strong demand support for the consumer electrical industry, largely defined as institutional demand for various products offered by the consumer electrical industry. The incremental supply of office spaces that is projected to unfold in India in the next decade, therefore provides a strong support for the consumer electrical industry. Indian office market witnessed new supply of 42.6 million sq. ft. in CY 2021, out of which 26.2 million sq. ft. area was absorbed. In CY 2022, the new supply was estimated at 50-52 million sq. ft. out of which 30.3 million sq. ft. was absorbed during period January 2022 to September 2022 and is projected to offer a new supply of around 53-54 million sq. ft. in CY 2023.

Exhibit 2.11: India Market for Office Space (in million sq. ft.) in CY



Source: Secondary Research

Indian office space market figure in Fiscal 2022 is till September 2022

Service economy and co-working spaces are two key demand drivers for the office supply in India. The size of the service economy in India and its resilient growth outlook in future is expected to provide a strong base for the continued growth of office spaces in the next decade. The growth of services exports (such as IT and information technology enabled services (“ITES”) sector) of India serves as a good proxy for the same and was estimated at US\$ 250 billion in Fiscal 2022 and this grew from US\$ 206.09 billion in Fiscal 2021 at a growth rate of 21.3%. India’s size of service exports is expected to grow to US\$ 800-1,000 billion by Fiscal 2030 at a CAGR of 11-12%.

Managed office spaces / co-working sector has also gained popularity and is predicted to grow by more than 15% over the next three years. The co-working space segment’s share in total absorption has increased from 12% in CY 2019 to nearly 13% in CY 2022. The sector witnessed a yearly growth of 30% from CY 2021 to CY 2022, as compared to a negative growth observed during the time of COVID-19 pandemic.

Retail space

Retail shops, either as standalone units or as part of a controlled space such as malls or mixed used buildings represent the second driver of commercial real estate. India’s consumption basket for overall retail market in the year CY 2022 was US\$ 844 billion and is expected to reach US\$ 1,162 billion by CY 2025. Of this, traditional share of retail is expected to be approximately 80% and the share of brick led modern retail is expected to be approximately 11% by CY 2025. The share of e-commerce was approximately 6% in CY 2022 and is expected to reach approximately 9% by CY 2025.

While, e-commerce has witnessed outsized growth over brick retail in the last decade, it has been from a low base. Further, the brick retail, both in traditional and modern brick form, has stayed resilient during this period. The growth of malls and brick and mortar modern retail during CY 2015 to CY 2022 demonstrates this point. In the next decade, India’s retail industry is expected to shift towards digital retail, while still maintaining the important role of physical brick-and-mortar stores.

Data centers

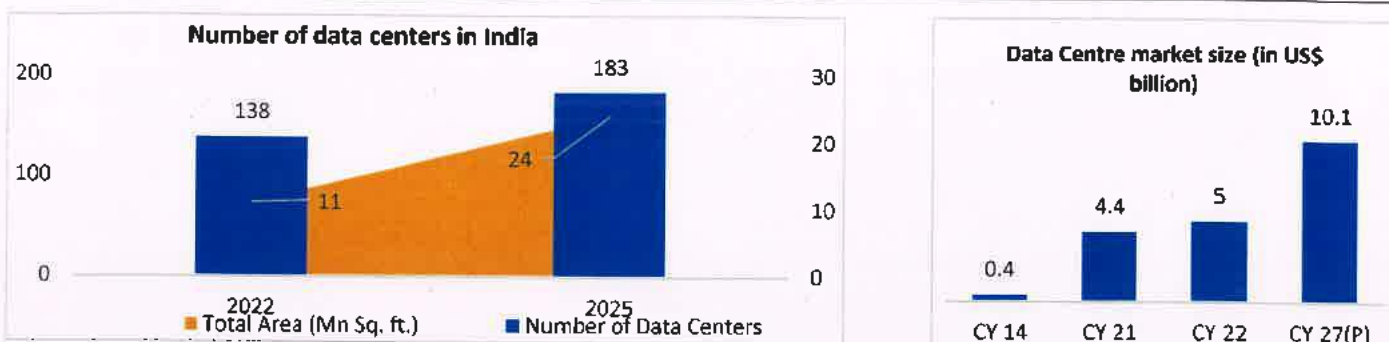
India’s growing data-consumption has spurred the need to store and process data, thus increasing the demand for data centers in India. The connectivity provided by the wiring and cabling infrastructure is the foundation of every data center to power them and keep pace with their processing speed and efficiency. Every new supply of data center as well as already installed base is expected to create demand for wires and switch gears not only in the new installation but also for replacement purposes, thereby, driving the demand for the W&C and FMEG sector.

The Indian IT ministry plans to offer incentives worth up to ₹ 15,000 crore under a national policy framework for data centers. The Govt is eyeing an investment of up to ₹ 3 lakh crore in the data center ecosystem over the next five years. This is expected to further accelerate the data center expansion in India. Therefore, the data center market is expected to grow at a CAGR of approximately 15% during CY 2022 to CY 2027.

As of March 2022, the number of data centers in India were 138 with 11 million sq. ft. area and is projected to reach 183 by CY 2025, comprising approximately 24 million sq. ft. area. The data center industry in India was valued at US\$ 400 million in CY 2014, which has grown to US\$ 4.4 billion in CY 2021 and is projected to reach US\$ 10.1 billion by CY 2027, growing at a CAGR of

approximately 15% between CY 2022 and CY 2027. Data center capacity is expected to exceed 1.7 GW levels by CY 2025 from approximately 900 MW in CY 2022.

Exhibit 2.12: Data Center market in India (CY)



Source: Secondary Research

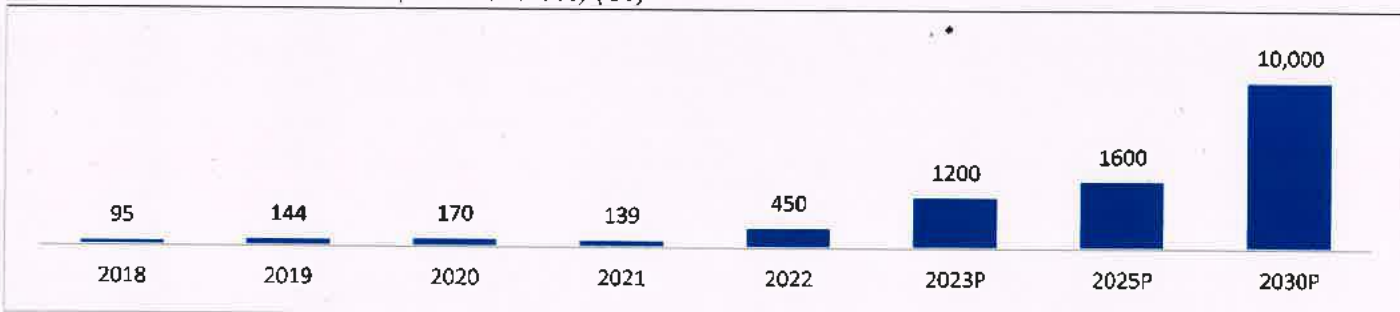
4. Transition of automobiles and transport towards EVs

EVs use electricity to charge their batteries which requires proper setup of wiring cables and switches to ease the process of plug-in/out at the charging stations or at home. With the increase in transition of automobiles and transports towards EVs, there is an increased demand for supply of charging stations, thus enabling the supply of more electrical products. Therefore, it is an important demand driver for the W&C industry.

The GoI has a target to achieve 30% electrification of the India's vehicle fleet by CY 2030 and has introduced several incentives and policies to support the growth of the EV industry. The EV sales are estimated to grow four times by CY 2025 and go up further to over 10 million units by CY 2030.

It is estimated that the India's domestic electric vehicle market will see a 47% CAGR between CY 2022 and CY 2030, with 10 million annual sales by CY 2030. Further, the EV market in India is expected to grow from US\$ 3.2 billion in CY 2022 to approximately 110 billion in CY 2029.

Exhibit 2.13: EV units sold in India (numbers in '000) (CY)



Source: Society of Manufacturers of Electric Vehicles

Key policy initiatives – growth levers for EV in India

The GoI has always been at the forefront of framing policies related to EV adoption in India. The government initiatives launched to increase EV adoption are provided below:

- **Faster adoption and manufacturing of (Hybrid and) EVs ("FAME") India Scheme:** FAME India was launched in CY 2015 which aimed to promote growth and early adoption of hybrid and EVs in India. FAME-II scheme was launched having a budget outlay of US\$ 1.3 billion (₹ 10,000 crore) to support over 1 million e-two-wheelers, 0.5 million e-three-wheelers, 55,000 e-passenger vehicles and 7,000 e-buses across the country. GoI has extended the scheme until CY 2024, as announced in the Indian union budget 2022-23.
- **PLI Scheme** launched by GoI for advanced chemistry cell battery storage to boost India's battery manufacturing. According to a Niti Aayog estimate, India's battery storage capacity is expected to reach 600 gigawatt hours ("GWh") by CY 2030.
- **Battery Swapping Policy:** During the Indian union budget 2022-23, GoI announced plans to introduce a Battery Swapping Policy and interoperability standards, with the intent of building and improving the efficiency of the battery swapping

ecosystem, thereby driving EV adoption.

• **Other Initiatives by the Indian government:**

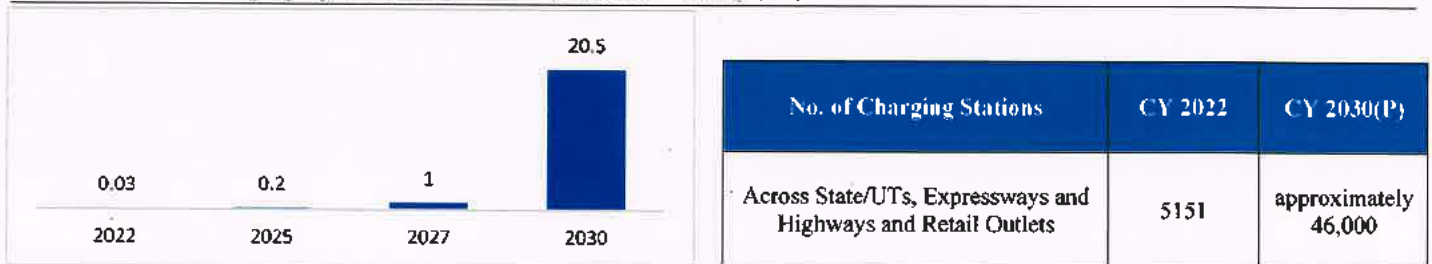
- Tax exemption of up to ₹ 1,50,000 (US\$ 1,960) under section 80EEB of Income Tax Act, 1961 while purchasing an EV (2W or 4W) on loan.
- Reduction of customs duty on nickel ore (key component of lithium-ion battery) from 5% to 0%.
- The GST on electric car sales has been cut from 12% to 5%.

Further, in the e-commerce and logistics sector, few companies such as Flipkart and Zomato have pledged 100% transition to EVs by CY 2030 by electrifying their delivery fleets in order to reduce their overall carbon footprint.

EV Infrastructure

The EV push in India has opened up business opportunities across three key segments – mobility, infrastructure (W&C) and energy. These include opportunities in EV franchising, EV OEM market, battery infrastructure, solar vehicle charging and battery swapping technology, among several others. With the expansion of the EV infrastructure, the industry of W&C and FMEG products is expected to witness a surge in demand. Basis the increasing sales of EVs in the market, India is expected to require installation of 20.5 lakhs charging infrastructure by CY 2030.

Exhibit 2.14: EV charging Infrastructure in India (numbers in lakhs) (CY)



Source: Secondary Research

5. Rural Electrification

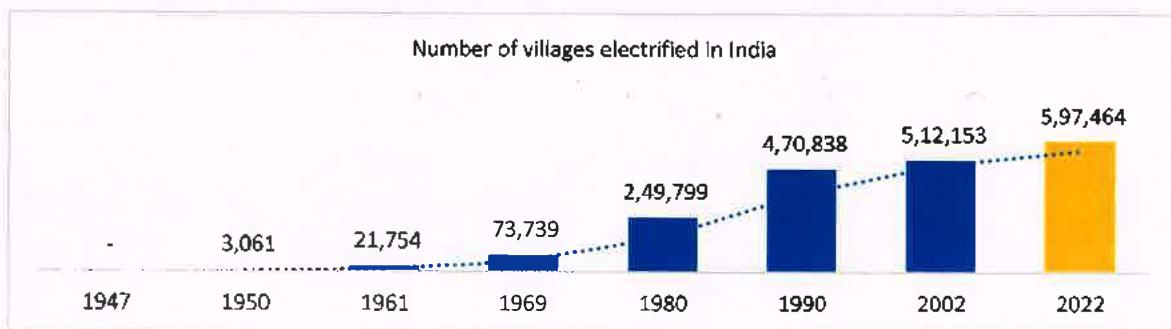
The betterment of road connectivity of villages and rural areas with the towns and cities has improved the standard of living of rural households. With this, the demand for basic electricity needs has also grown over time in rural areas, thus increasing the demand of new supply of electrical goods.

The Deendayal Upadhyaya Gram Jyoti Yojana (“DDUGJY”) introduced by GoI was launched on December 3, 2014, with an objective to provide electricity supply to rural India and electrify the non-electrified villages in India. Further, the Pradhan Mantri Sahaj Bijli Har Ghar Yojana – Saubhagya (“Saubhagya”) was launched in October 2017 by GoI for electrification of rural and urban poor households in India.

As per the report by Ministry of Power, GoI, a total 2.9 crore households have been electrified till March 2023 out of which seven states namely, Assam, Chhattisgarh, Jharkhand, Karnataka, Manipur, Rajasthan, and Uttar Pradesh reported 100% household electrification as on March 31, 2021. More than 11.8 lakh households still remain to be electrified, which is expected to be completed over the next few years.

The number of electrified villages has increased from 3000 villages in CY 1950 to 6 lakhs village in CY 2022.

Exhibit 2.15: Number of villages electrified in India (CY)



Source: PIB

Electrification in India has increased over time with the support from schemes like DDUGJY, Saubhagya and IPDS, which has given the electrical market a major boost. It has opened new markets for companies in the W&C and FMEG industry, that can now sell their products into the rural parts of India as well. The expansion of rural electrification is expected to significantly increase the demand of electrical products, as new power lines and infrastructure need to be set up and maintained.

6. Push towards Renewable Energy

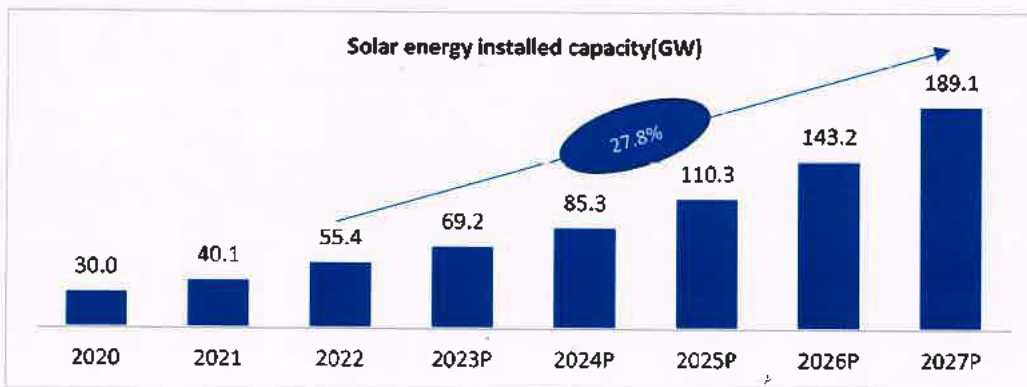
As a part of Paris Agreement Under the United Nations Framework Convention on Climate Change, many countries have committed to hold the increase in the global average temperature to well below 2°C above pre-industrial levels. Japan, South Korea, and European Union have announced net zero emissions by CY 2050. India has also announced to achieve net zero emission by CY 2070. Such commitments of different nations towards building a cleaner, greener, and sustainable environment have resulted in increased adoption of renewable energy projects such as solar and wind energy, which in turn is expected to serve as a key growth driver for W&C and FMEG industry in India as well as global market. India is planning to install 500 GW of renewable energy capacity by CY 2030, which is expected to involve an investment of at least ₹ 2.4 lakh crore.

India’s energy demand is expected to increase more than that of any other country in the coming decades due to its sheer size and enormous potential for growth and development. India’s renewable energy capacity reached at 168.96 GW by February 2023, and it is expected to achieve 500 GW of installed renewable energy capacity by 2030, out of which 280 GW is expected from solar energy.

India has installed capacity of around 62 GW of solar power plants as on November 30, 2022, of the total target installation of 100 GW grid-connected solar power plants for the National Solar Mission (“NSM”) launched in January 2010 by GoI. This includes 52 GW from ground-mounted solar projects, 7.8 GW from rooftop solar projects, and 2.1 GW from off-grid solar projects. Further, new developments in solar projects are being approved in different states to generate electricity that is scaling up the demand for electrical goods to connect long distant grids with each other.

To facilitate large scale grid-connected solar power projects, a scheme for “Development of Solar Parks and Ultra Mega Solar Power Projects” is under implementation with a target capacity of 40 GW capacity by March 2024.

Exhibit 2.16: Solar energy capacity forecast (Fiscal year)



Source: Secondary Research

Solar power capacity has increased by 15x times between Fiscal 2014 and 2021, i.e., from 2.6 GW in Fiscal 2014 to 40.1 GW in Fiscal 2021 and is further expected to grow at the rate of approximately 3.4x between Fiscal 2022 and Fiscal 2027.

During the Indian union budget 2022-23 speech, an additional allocation of ₹ 19,500 crore was announced to augment solar PV module manufacturing under the PLI scheme.

Impact of key growth drivers on the W&C and FMEG industry

The table below depicts the impact of the key growth drives on W&C and FMEG sector.

Sl. No.	Key Growth Drivers of W&C and FMEG industry	W&C	Lights	Fans	Switches and Switch gear
1	Public and private investment outlay in infrastructure	High	Medium	Medium	Medium
2	Urbanization and smart cities	High	Medium	Medium	Medium
3	FDI and PE investment in real estate sector	High	High	High	High
4	Continued growth of residential real estate sector	High	High	High	High
5	Resilient commercial real estate sector	High	High	High	High

6	Transition of automobiles and transport towards electric vehicles	High	NA	NA	NA
7	Policy reforms promoting production, exports and ease of doing business	High	Medium	Medium	Medium
8	Digitalization	High	NA	NA	NA
9	Safety standards	High	High	High	High
10	Rural electrification	High	Medium	Medium	Medium
11	Push towards renewable energy	High	NA	NA	NA

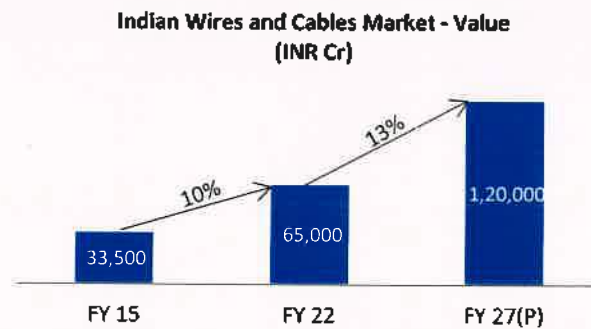
3. Wires and Cables Market in India

Industry Overview

Wires and Cables Market Size

The W&C market constitutes approximately 40% of the Indian W&C and FMEG industry. It has grown at a CAGR of approximately 10% from ₹ 33,500 crore in Fiscal 2015 to ₹ 65,000 crore in Fiscal 2022 and is further expected to grow at a CAGR of approximately 13% till Fiscal 2027 to reach a market value of ₹ 1,20,000 crore.

Exhibit 3.1: Indian Wires and Cables Market – By Value (₹ Cr) in Fiscal Year



Source – Technopak Analysis
Note-This does not include exports.

Key sub-categories of Wires and Cables

A wire is a single conductor, whereas a cable is a group of conductors, used for transmitting electricity and telecommunication signals.

W&C market can be divided into 5 key sub-categories namely housing wires, power cables, control and instrumentation cables, communication cables and flexible and specialty cables.

- **Housing wires** are used in the construction of almost every commercial, industrial, and residential property and these products carry electrical current to all power applications in a building.
- **Power cables** are mainly used for power transmission and distribution purposes.
- **Control and instrumentation cables** are multiple conductor cables that convey low energy electrical signals used for monitoring or controlling electrical power systems and their associated processes.
- **Communication cables** are electrical cables used to send information signals and are most commonly found as coaxial, fiber optic, data and ethernet, and twisted wire pairs.
- **Flexible cables** are used in, among other things, consumer appliances, railways and mining and **specialty cables** are used for marine, oil and gas facilities offshore / onshore.

Housing wires constitute approximately 32.8% (₹ 21,300 crore) of the wires and cables market in India. In Fiscal 2022, The market size of 90m and 200m housing wires by value are ₹ 12,100 crore and ₹ 9,200 crore respectively. State wise market size of 90 m and 200m housing wires by value are given in exhibit 3.2 below.

Exhibit 3.2: Indian Housing Wires and Cables State wise Market – By Value (₹ Cr) in Fiscal Year


State	Domestic Market Size of 90m Housing Wire in Fiscal 2020	Domestic Market Size of 200m Housing Wire in Fiscal 2020	Domestic Market Size of 90m Housing Wire in Fiscal 2021	Domestic Market Size of 200m Housing Wire in Fiscal 2021	Domestic Market Size of 90m Housing Wire in Fiscal 2022	Domestic Market Size of 200m Housing Wire in Fiscal 2022	Domestic Market Size of 90m Housing Wire in Fiscal 2023 (Apr-Dec 9M)	Domestic Market Size of 200m Housing Wire in Fiscal 2023 (Apr-Dec 9M)
Andhra Pradesh	620	220	570	380	665	505	505	410
Assam	470	170	430	285	500	380	380	310
Bihar	695	250	635	425	740	560	560	455
Chhattisgarh	180	65	170	110	195	150	150	120
Delhi NCR	465	170	430	285	500	380	375	310
Gujarat	890	320	820	545	950	725	720	590
Haryana	420	150	385	255	450	340	340	275
Jharkhand	310	110	280	190	325	250	250	200
Karnataka	690	245	630	420	730	555	555	450
Kerala	640	230	585	390	680	520	520	420
Madhya Pradesh	480	170	440	295	510	390	390	315
Maharashtra	1,345	485	1,235	825	1,430	1,085	1,095	885
Odisha	245	90	225	150	260	200	200	160
Punjab	350	125	320	215	370	280	285	230
Rajasthan	410	145	375	250	440	330	330	270
Tamil Nadu	725	260	665	445	780	590	590	480
Telangana	650	230	595	395	690	525	525	425
Uttar Pradesh	995	355	915	610	1,050	800	805	655
Uttarakhand	80	30	75	50	85	65	65	50
West Bengal	910	250	645	430	750	570	740	600





Source – Technopak Analysis

RR Kabel is one of the leading consumer electrical companies in the housing wire segment in India, representing approximately 11.5% market share by value in the domestic housing wire market in Fiscal 2022. They have been able to do so through certain initiatives such as 'Project KaRRma' in Fiscal 2020 (comprising of two phases to double the market share and retail outreach in domestic house wires, before increasing micro and nano market* reach), to achieve a higher market share in housing wires by expanding retail outlets, electricians, sales force and product portfolio. The other key player in the housing wire segment is Finolex, while Polycab and KEI dominate the power cables segment.

*Micro markets are the individual pin codes in urban towns (all towns with over 0.3 million population) and Nano markets are particular localities within the pin code.

Exhibit 3.3: Sub-categories of Wires and Cables with examples

Sub-category of Wires & Cables	Sectors in which pre-dominantly used	Examples
Housing Wires	<ul style="list-style-type: none"> Wiring of residential and commercial buildings such as apartments, shopping complexes and offices. 	

Power Cables	<ul style="list-style-type: none"> • Power transmission and distribution • Solar and wind energy 	
Control and instrumentation cables	<ul style="list-style-type: none"> • Chemical and fertilizers • Automotive • Steel • Oil and gas 	
Communication cables	<ul style="list-style-type: none"> • Service sector • Industrial sector such as steel, automotive etc. • Residential buildings for internet, intercom purpose 	
Flexible and specialty cables	<ul style="list-style-type: none"> • Consumer appliances • Railways • Mining • Marine, oil and gas facilities offshore / onshore 	

Source – Secondary research

Exhibit 3.4: Break up of different sub-categories of W&C Industry in India -By Value (Fiscal Year)



Source – Technopak Analysis

Exhibit 3.5: Sub-category wise CAGR of W&C between Fiscal 2022 and Fiscal 2027(P)

Sub-category of Wires & Cables	CAGR between Fiscal 2022 and Fiscal 2027(P)
Housing Wires	14.3%
Power Cables	13.0%
Control and instrumentation cables	10.0%
Communication cables	14.0%
Flexible and specialty cables	13.0%

Source – Technopak Analysis

Trends shaping the Domestic Wires and Cables Market

Shift towards Branded Play

As of Fiscal 2022, branded players have nearly 70% of the market share (approximately ₹ 45,500 crore) of the W&C market in India. Within this 70%, five leading players namely Polycab, KEI, Havells, Finolex and RR Kabel, garner approximately 60%-62% market share and the balance 38%-40% is constituted by challenger brands like Syska and V-Guard. Branded players are estimated to capture approximately 80% (approximately ₹ 96,000 crore) market share by Fiscal 2027.

Exhibit 3.6: Share of Branded Players in Indian W&C Market – By Value (Fiscal Year)



Source – Technopak Analysis

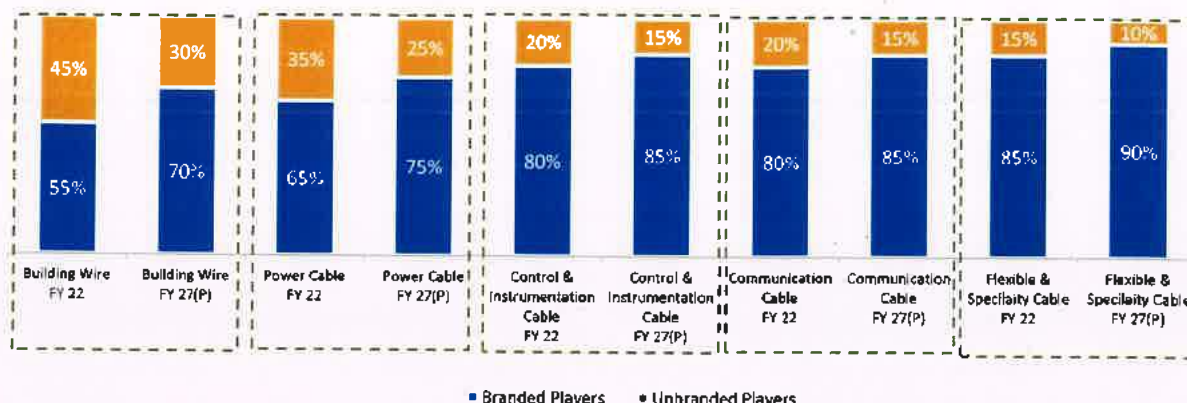
The W&C market in India has steadily moved from largely unbranded play towards branded play including regional and national players, because of reasons such as rising awareness among consumers towards safety and quality, advent of GST regime etc. Apart from these, the consolidation of branded play of the wires and cables market over unbranded play is driven by two other factors:

- **Technological innovations:** Continuous product improvement in the W&C industry, owing to technological interventions and innovations by branded players have made it difficult for unbranded players to compete. Innovations like LSOH, unilay core technology (“UCT”) have created favorable product differentiation for the branded players in the market.
- **ATL focused brand building by branded players:** Companies in W&C industry are focusing on brand building through ATL marketing. Marketing campaigns focused on, among other things, safety and durability are being designed in order to increase consumer awareness. Television, print, outdoor (billboards, movie theatres) and digital media are being used extensively as marketing mediums for ATL brand building. Companies are also using celebrity endorsements to build their brands. Such advertising and marketing spend by large companies is a big business moat and plays against small and medium unbranded players.
- **Distribution and Reach:** Branded players, through their strong distribution network servicing extensive retail footprint, have been able to cater to a broad segment of customers, ranging from Metro and Mini Metro cities to tier III and beyond cities as well as in rural areas. This has accelerated the growth of branded play in the market.

The share of branded play in the W&C market by value, is expected to grow to approximately 80% by Fiscal 2027 owing to factors such as GST implementation, execution of the BEE star norms, improvement in efficiency and cost structure of branded players resulting in the reduction of price gap between the branded and unbranded play, and economies of pan-India distribution network.

In W&C market, share of branded player in sub-categories like housing wires and power cables is approximately 55% and 65%, respectively as of Fiscal 2022 and these sub segments are expected to witness a substantial shift in share by Fiscal 2027, capturing approximately 70% and 75%, respectively. Other sub-segments like flexible and specialty cables, communication cables and control and instrumentation cables are mostly branded, with branded players controlling approximately 80-85% of the market as of Fiscal 2022. These sub-segments are also expected to witness a slight increase in branded share, controlling approximately 85-90% of the market by Fiscal 2027.

Exhibit 3.7: Share of Branded Play within sub-categories of Indian W&C Market – By Value (Fiscal Year)



Source – Technopak Analysis

New Technological Interventions

Increasing technological interventions in W&C industry with an objective of achieving more safety and energy efficiency, are pivoting the market towards branded players. Few of the recent technologies introduced in the industry are provided below:

- LSOH:** Low smoke zero halogen wires and cables have cable jacketing and insulation, made up with materials that produce low smoke and non-toxic halogens on being exposed to fire or high temperatures. Such type of material is used in poorly ventilated areas such as aircraft and rail carriages. In fire incidents, low smoke factor of the cable would help in maintaining visibility and reducing respiratory damages, while zero halogen inhibits the production of toxic halogen gas. All the five leading players in the industry namely Polycab, KEI, Havells, Finolex and RR Kabel manufacture LSOH wires and cables. RR Kabel is the first company in India to introduce LSOH insulation technology in W&C products.
- UCT:** W&C with UCT helps in saving space because of high density wiring. These have negligible chances of breakage while stripping the insulation, facilitating perfect contacts with compact bunching which helps in better conductivity and savings. Additionally, the increased mechanical strength of W&C minimizes breakage of strands, thereby giving enhanced safety. RR Kabel is the first company in India to introduce UCT (heat resistant and flame retardant) products.
- E-beam (electron beam):** E-beam cross-linking technology protects wire and cable insulation from the heat of short-circuits because of high-temperatures. The processing improves a range of properties of W&C such as tensile strength especially at elevated temperatures, abrasion-resistance, thermal-resistance, cut through-resistance and shear and compressive strength. Electron beam cross linked wires and cables are green and eco-friendly in nature. Among leading players, Polycab manufactures e-beam wires and cables in the industry along with certain other players such as Apar Industries and Vindhya Telelinks.

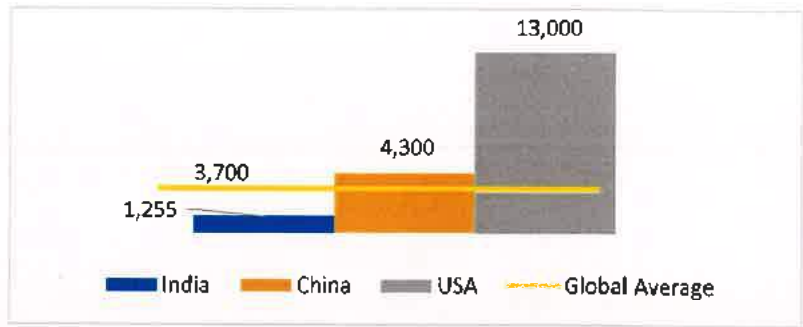
Technical and Regulatory Compliance

Many stringent technical standards and compliances have been laid out by various countries for wires and cables product. India has ISO 9001:2015, ISO 14001, ISO 45001 certifications for W&C product. Similarly, Europe has laid out regulatory compliances such as Registration, Evaluation, Authorization and Restriction of Chemicals (“REACH”); Restriction of Hazardous Substances Directive (“ROHS”) and Construction Products Regulations (“CPR”). Such technical and regulatory compliances require heavy investment, which has made unbranded players unviable, thereby pivoting the industry towards branded players. RR Kabel is the first company in India to launch products compliant with the European regulations such as REACH, ROHS and CPR. The manufacturing facilities of RR Kabel has 35 international product certifications as on December 31, 2022.

Key Growth Drivers of Domestic W&C Market

Apart from growth drivers impacting the electrical consumer market like rural electrification, growing real estate sector and various policy interventions by GoI to boost production, exports and promote ease of doing business, there are a few sector specific growth drivers of the W&C market.

Exhibit 3.8: Per Capita Per Annum Electricity Consumption (in kWh) in CY 2021



Source – Press Information Bureau, Government of India

Increase in per capita per annum electricity consumption

The global average of per capita per annum electricity consumption is estimated to be approximately 3700 kWh in CY 2021. India's per capita per annum electricity consumption is low, as compared to other countries like USA and China, at approximately 1255 kWh, thereby suggesting headroom for growth in future. Such increase in per capita per annum electricity consumption is expected to drive the demand for W&C products like housing wires in India.

Key Players in the Industry

The Indian W&C industry has been gradually moving from largely unbranded play towards branded play including regional and national players, as a result of rising awareness among consumers towards safety and quality, advent of GST regime, increasing technological and product complexities, as well as growing marketing and branding activities by branded players. Nearly 70% of the wires and cables market in India is controlled by branded play. Within this 70%, five leading players namely Polycab, KEI, Havells, RR Kabel and Finolex, garner approximately 60%-62% market share and the balance 38%-40% is controlled by challenger brands like Syska and V-Guard. Polycab is the market leader having approximately 16% market share by value, followed by KEI (approximately 8% market share), Havells (approximately 7% market share), Finolex (approximately 6% market share) and RR Kabel (approximately 5% market share). RR Kabel is the fifth largest player in wires and cables market in India, representing approximately 5% market share by value, as of Fiscal 2022. Within branded market, Polycab garners approximately 23% market share by value, followed by KEI (approximately 11% market share), Havells (approximately 10% market share), Finolex (approximately 9% market share) and RR Kabel (approximately 8% market share). RR Kabel is the fifth largest player in branded wires and cables market in India, representing approximately 8% market share by value, as of Fiscal 2022, as compared to approximately 5% market share by value as of Fiscal 2015. RR Kabel's share in the domestic W&C market has increased from 3% in Fiscal 2015 to 5% in Fiscal 2022. W&C category is a distribution led category wherein the role of distributors and retail touchpoints is critical for capturing the market. For instance, leading player RR Kabel has approximately 6,546 dealer and distributors spread across pan-India, and has approximately 97,248 retail touchpoints as on December 31, 2022.

Exhibit 3.9: Presence of leading players in various sub-categories in W&C market in India

Players	Power Cable (LT/HT/EHV)	Control and Instrumentation Cable	Communication Cable	Housing Wires	Flexible and Specialty cables
KEI	✓✓	✓	✓	✓	✓
Havells	✓	✓	✓	✓	✓✓
Finolex	✓	✓	✓	✓✓	✓
Polycab	✓✓	✓	✓	✓	✓
RR Kabel	✓*	✓	✓	✓✓	✓

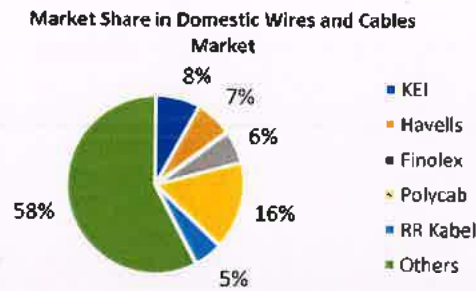
*RR Kabel does not manufacture EHV power cables

LT-Low Tension, HT-High Tension, EHV-Extra High Voltage

✓ - Presence, ✓✓ - Primary sub-category

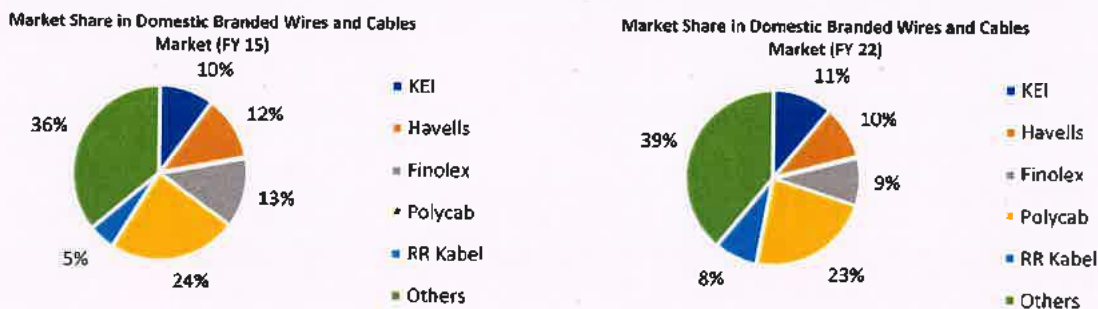
Source – Secondary research and Technopak Analysis

Exhibit 3.10: Market share of players in domestic W&C market in India – by value (Fiscal 2022)



Source – Technopak Analysis

Exhibit 3.11: Market share of players in Domestic Branded Wires and Cables market in India – By Value (in Fiscal)



Source – Technopak Analysis

The W&C industry is a distribution-led traditional retailer driven category. A typical value chain involves manufacturing brands, distributors, retailers and customers. In case of housing wires, electricians form the major segment of customers in the value chain. In certain instances, manufacturers sell directly to institutions. There are also direct dealers in the market who buy the products from brand manufacturers and sell those, either to retailers or directly to the customers. Contractors, architects, institutional buyers and end-consumers form the customer base of W&C market. The distributor buys W&C from brand manufacturers usually at a discount of approximately 35-40%. The distributor can garner additional discount linked to turnover and cash discount. The distributor further sells the product to retailers and retains a margin of approximately 4-5%. Retailers sell the product to end consumers with a retained margin of approximately 5-6%. In instances where manufacturing brands sell directly to institutions, they give a discount of approximately 40-45% on the price. Where manufacturing brands sell their products to direct dealers, they give a discount of approximately 35-40% and additional turnover / cash discounts of approximately 5-6%. Direct dealers retain a margin of approximately 3-4% while selling to retailers and approximately 4-5% while selling directly to end consumers.

A pan-India distribution network provides players high channel partner stickiness and wider reach. New entrants / regional players require more time to build a similar network, thereby providing the pan-India players a significant market place advantage. For instance, RR Kabel has a pan-India distribution network with over 792 employees in its sales force and has one of the largest network of electricians, covering 147,810 electricians across India as on March 31, 2022, which has grown to 2,54,608 electricians as on December 31, 2022.

Sales Channels and Share of each Channel

Exhibit 3.12: Sales of W&C across sales channel (Fiscal Year)



Source – Technopak Analysis

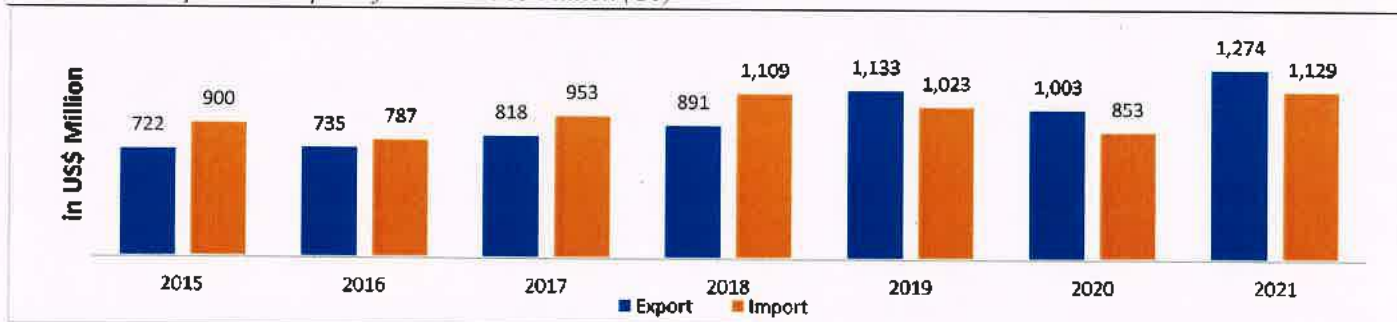
As per industry convention, A product's end use determines whether the sale is through a business-to-business (B2B) or business-to-consumer (B2C) channel. In terms of revenue contribution from B2C sales channels in wires and cables, RR Kabel has the highest contribution with approximately 75% of the revenue coming from B2C sales channel as of Fiscal 2022.

Exports and imports of W&C

Indian W&C industry exported products valued approximately US\$ 1,274 million in CY 2021. It majorly exports to USA constituting approximately 18% of exports, followed by UAE (9%) and UK (9%). As of CY 2021, RR Kabel is the largest exporter of wires and cables from India, in terms of value, representing an approximately 11% market share (pertaining to FY 22 revenue of RR Kabel) of the exports market from India.

Approximately US\$ 1,129 million worth of W&C products were imported from across the globe by India in CY 2021, wherein China accounts for approximately 33% of the imports followed by Korea (8%), UK (8%) and USA (8%).

Exhibit 3.13: Export and Import of W&C in US\$ Million (CY)



Source – ITC Trade Map and Technopak Analysis, HS Code: 8544

Indian W&C market became net export positive for the first time in CY 2019 and has been export positive since then. This shows the widespread acceptability of Indian W&C product worldwide. W&C export market has grown at a CAGR of 8% from CY 2015 to CY 2021 and is expected to grow positively in future. This growth would be driven primarily by three factors:

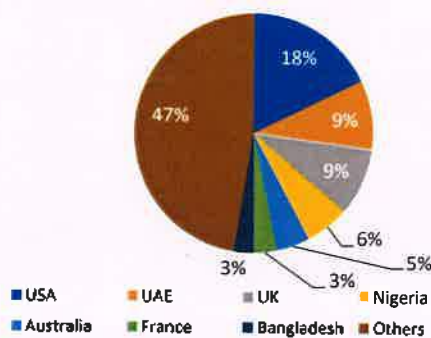
- China plus one strategy:** In 1990s, many global manufacturing entities in geographies such as US and Europe shifted their production facilities to China owing to favorable factors of production, which made it the center of global supply chain. But in CY 2021, when there was a surge in demand across the world post-COVID-19 pandemic, China's zero COVID policy and supply chain disruption issues made it difficult for these manufacturing entities to meet the demand. As a result, such companies are contemplating diversifying their business and investment out of China to alternative destinations. Technopak believes that this China plus one strategy presents a great opportunity for India because of its large manufacturing base, favorable factors of production, strong business ecosystem, and incentivizing government policies, which in turn, is expected to help in growing the exports market of Indian W&C industry. Leading players like RR Kabel are well-positioned to benefit from the global shift away from China-based manufacturing to China plus one strategy resulting in a share gain for Indian manufacturers in the global market.
- Export Incentives:** Various policy interventions by GoI to promote export of goods and services is expected to further boost the exports market for W&C in India. For instance, AAS and the EPCG Scheme are being implemented to enable duty free

import of raw materials and capital goods for export production. RoDTEP scheme has also been introduced which rebates various central, state, and local duties/ taxes on exported products.

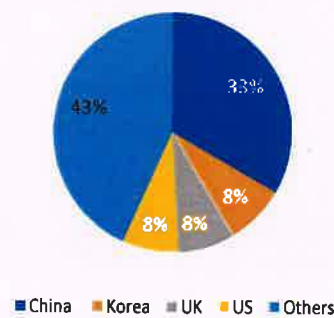
- **Technical and Regulatory Compliance:** Many stringent technical standards and compliances have been laid out by various countries for wires and cables product. For example, Europe has laid out regulatory compliances such as REACH, ROHS and CPR. RR Kabel, a leading company, has over 35 international product certifications, which has enabled them to export its products to global markets.
- **Transition towards clean and green energy:** Commitment of various countries towards achieving a cleaner and greener environment, for instance, the Paris agreement, and net zero emission have resulted in increasing adoption of renewable projects across the globe. These are expected to increase the demand for W&C in the global market, which in turn would provide a great opportunity for Indian exports.

Exhibit 3.14: Export and Import share by countries of W&C (CY 2021)

Export Share by countries (CY 21)



Import Share by countries (CY 21)



Source – Secondary research and Technopak Analysis

Exhibit 3.15: Export revenue of leading W&C players (Fiscal Year)

Players	Exporting to # countries	Export Revenue in ₹ Crore (Fiscal 2022)	Export Revenue in ₹ Crore (Fiscal 2021)	Export Revenue in ₹ Crore (Fiscal 2020)
RR Kabel	58	1,007	583	502
KEI	50+	585	627	879
Havells	60+	504	361	317
Finolex	USA and UAE	28	31	26
Polycab	60+	842	747	1,095

For RR Kabel, KEI, Finolex and Polycab, 100% of exports come from wires and cables, whereas for Havells 60% of exports come from wires and cables

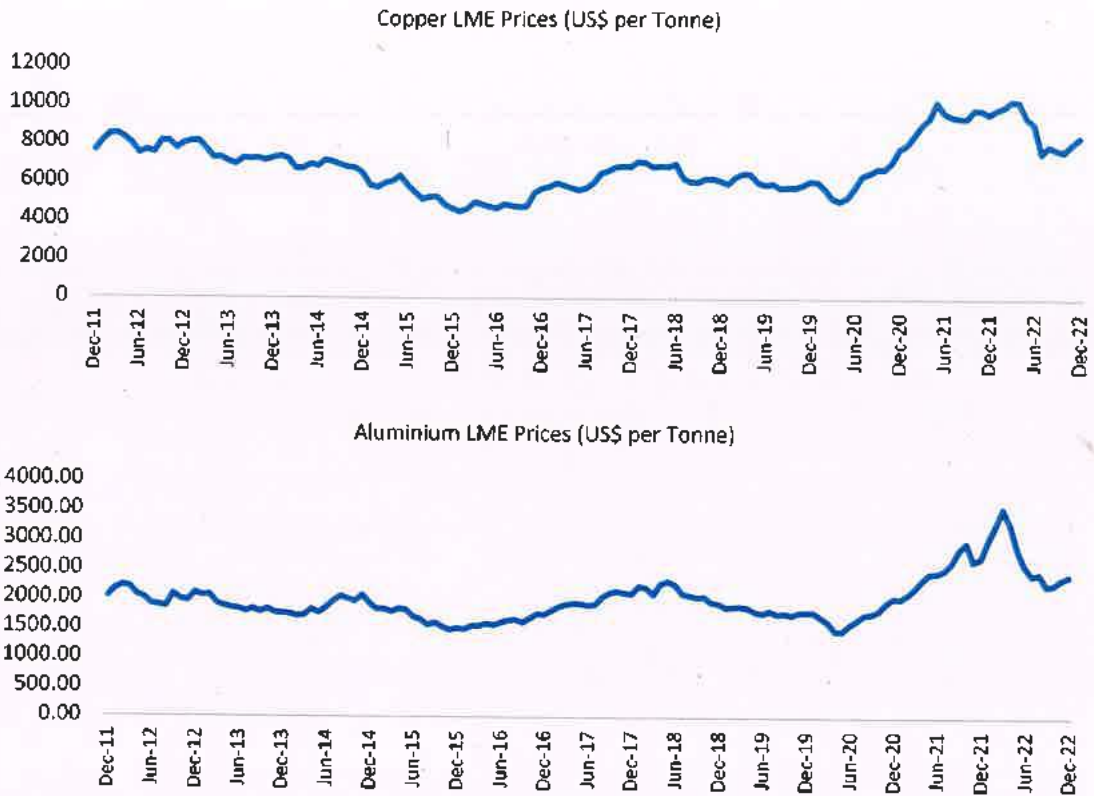
Source – Secondary research and Technopak Analysis

Key Risks and Challenges

Volatility in prices of raw materials

Prices of raw materials such as copper and aluminum have been volatile over the past few years. Copper price was \$8,043 per ton in January 2012, which has increased to \$8,367 per ton in December 2022, reaching the decade high price of \$10,238 per ton in March 2022. The prices of copper have been highly volatile exhibiting a steep decline from \$10,238 per ton in March 2022 to \$7,530 per ton in July 2022. Likewise, the price of aluminum has also increased from \$2,144 per ton in January 2012 to \$2,425 per ton in December 2022, reaching the decade high price of \$3,538 per ton in March 2022. The increase in prices of raw materials poses a key challenge to W&C manufacturers as it leads to an increase in raw material costs. This increase can either be passed on to the consumer or absorbed by the manufacturer or a combination of both. As per industry convention, the corresponding increase in prices of copper and aluminum has been passed on to the consumers historically, in a lagged manner. The corresponding increase in price may lead to a reduction in sales volume. Based on overall industry dynamics and macroeconomic factors, the revenue (price*volume) and profitability of players is likely to be impacted.

Exhibit 3.16: Copper LME Price (US\$/Ton) and Aluminum LME Price (US\$/Ton) from CY 2012 to CY 2022



Source – Secondary research and Technopak Analysis

Fluctuation in currency exchange rate

Fluctuation in rupee-dollar exchange rate also poses a key challenge to the W&C industry. The average rupee-dollar exchange rate was ₹ 74 in CY 2021, which had increased to ₹ 83 in October 2022. Players may import raw materials such as aluminum, insulation materials because of economies of cost and quality, which when exposed to exchange rate fluctuation, may result in increase in overall cost, thereby impacting the margin.

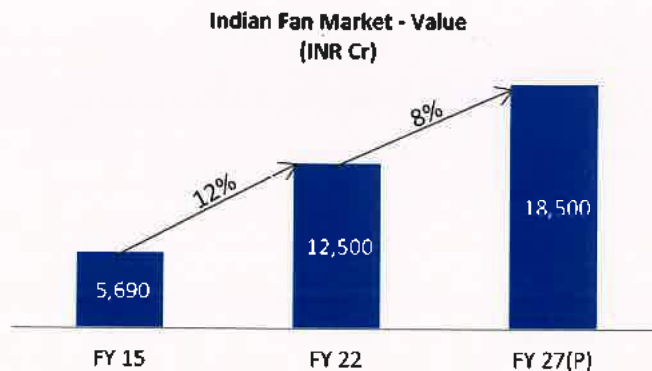
4. Fan Market in India

Industry Overview

Fans Market Size

The total market for fans has grown at a CAGR of approximately 12% from ₹ 5,690 crore in Fiscal 2015 to ₹ 12,500 crore in Fiscal 2022 and is further expected to grow at a CAGR of approximately 8% till Fiscal 2027 to reach a market value of ₹ 18,500 crore.

Exhibit 4.1: Fan Market in India – By Value (Fiscal Year)



Source – Technopak Analysis
Note-This does not include exports.

Key sub-categories of Fans

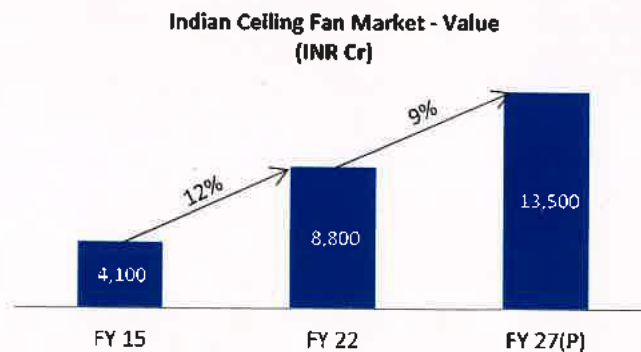
The fan market in India can be sub-divided into three key segments as ceiling fans, table, pedestal and wall (collectively, “TPW”) fans and fans such as industrial and exhaust fans (“Other Fans”). While ceiling fans account for approximately 72% of the fan industry in India followed by TPW fans constituting approximately 20% of the industry, Other Fans account for the balance 8% of the industry in Fiscal 2022, based on value. Ceiling fans are primarily used in households and commercial establishments, whereas primary installation places for table fans are small shops and workplaces.

Construction of new houses, replacement demand in existing households, increase in installation ratio of fan per household and successful execution of energy efficiency norms are expected to provide the required impetus for increase in demand of fans in India. Additionally, the growth in fan exports because of global requirements is also expected to drive the production of fans in India.

Ceiling Fan Market

The total market for ceiling fan has grown at a CAGR of approximately 12% from ₹ 4,100 crore in Fiscal 2015 to ₹ 8,800 crore in Fiscal 2022 and is further expected to grow at a CAGR of approximately 9% till Fiscal 2027 to reach a market value of ₹ 13,500 crore.

Exhibit 4.2: Indian Ceiling Fan Market – By Value (₹ Cr)



Source – Technopak Analysis
Note-This does not include exports.

Price Segmentation - Ceiling Fans

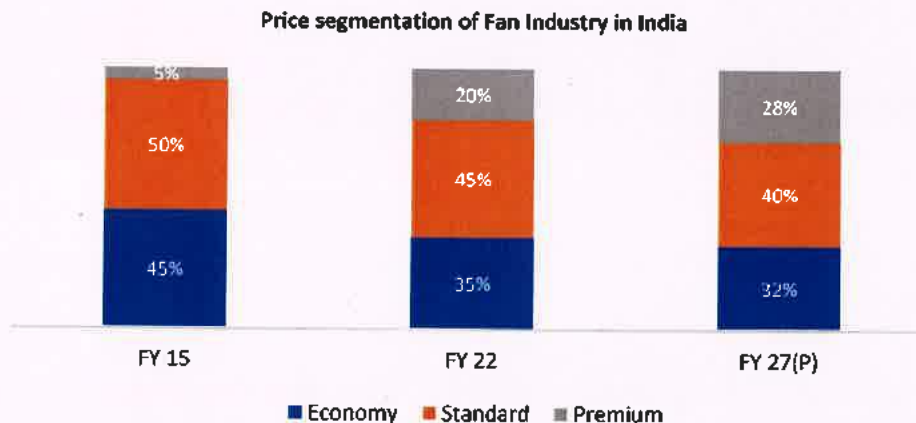
As per price points, the entire ceiling fan market can be categorized into three price segments namely economy, standard and premium.

Exhibit 4.3: Price segmentation of Ceiling Fans

Segment	Price range	Examples
Economy	<₹ 1,500	Luminous Morpheus 1200 mm 3 Blade Ceiling Fan, Crompton Jura 1200mm 3 Blades Ceiling Fan, Oriental-Stellar 600mm Stylish Fan, Havells SS390 1200 mm 3 Blade Ceiling Fan
Standard	₹ 1,500 – ₹ 4,000	RR Kabel White Ceiling Fan with Remote, Standard Zinger 1200 mm 3 Blade Ceiling Fan by Havells, Crompton Alpha Broz 1200 mm 3 Blade Ceiling Fan, Crompton Gianna 900 mm 3 Blade Ceiling Fan
Premium	>₹ 4,000	Luminous Lucrezia 1320mm Remote 5 Blade Ceiling Fan, Havells Stealth Puro Air 1250mm 3 Blades Ceiling Fan, Orient Stallion-1 1200 mm 4 Blade Ceiling Fan, Orient Electric Aero slim 1200mm 3 Blades Ceiling Fan, Crompton Nebula 4-Blade Ceiling Fan

The above segmentation is as per Fiscal 2022.

Source – Secondary research, Technopak Analysis



Source – Secondary research and Technopak Analysis

The fan industry in India is steadily shifting towards premium segment, with approximately 20% market share in Fiscal 2022, as compared to approximately 5% market share in Fiscal 2015. Increase in disposable income have enhanced the purchasing power of people, which has resulted in increased demand for technologically advanced and aesthetic fan products. Production of smart and IoT-enabled ceiling fans, enhanced design in terms of color and aesthetics of ceiling fans, feature reinforcement through air purification and bladeless features are expected to serve as the key drivers of premiumization in the Indian fan market. The fan market is benefitting from the drivers of premiumization, which can be evidently witnessed in the rising share of premium products in the overall fan market. The premium segment is expected to garner approximately 28% market share by Fiscal 2027. Many leading and challenger players are launching premium and decorative fans. For example, RR Kabel has launched Luminous Audie 1200mm Smart Ceiling Fan in the premium segment, which is an IoT enabled and Alexa compatible smart fan. Havells has also launched a Stealth Puro Air premium ceiling fan having 3-stage filtration and air purification benefits. Atomberg's Gorilla fans not only have the feature of remote-control but also a sleep mode and timer mode that can be pre-set.

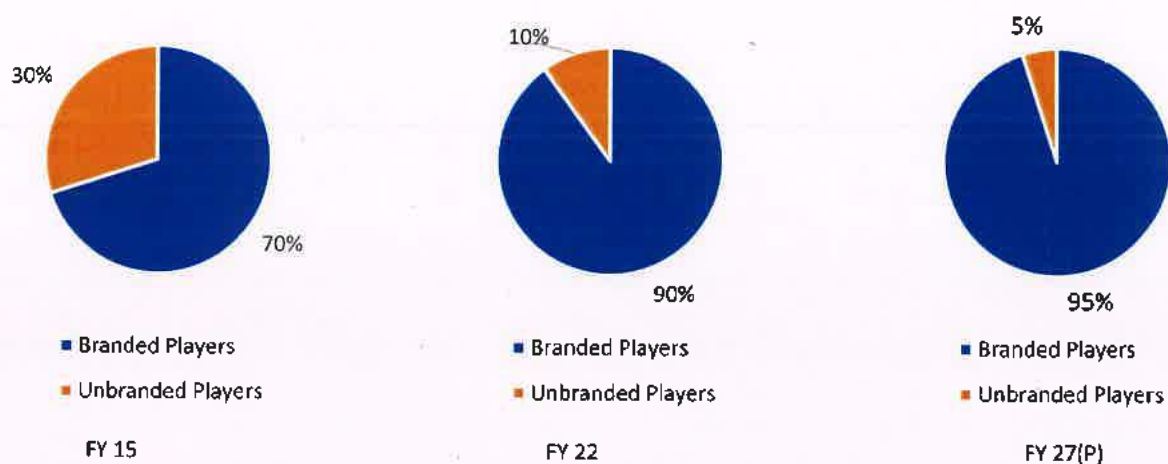
On a regional level, the fan market has been classified into North India, West India, South India, and East India, where South India currently dominates the market with approximately 30% market share by value in Fiscal 2022.

Trends shaping the Domestic Fan Market

Shift towards Branded Play

As of Fiscal 2022, Indian ceiling fan market is primarily dominated by branded players, controlling close to 90% of the market, out of which 4-5 top players garner approximately 80% market share. These leading players include Crompton Greaves, Havells, Orient Electric, Bajaj Electricals, and Usha. The remaining share of branded play market is contributed by challenger brands like RR Kabel and V-Guard. Branded players are estimated to capture approximately 95% market share by value by Fiscal 2027.

Exhibit 4.4: Share of Branded Play in Indian Ceiling Fan Market – By Value (Fiscal Year)



Source – Technopak Analysis

Apart from rising awareness among consumers to seek safe and quality products and the advent of GST regime, consolidation of branded players in the ceiling fan market over unbranded player is driven by two factors:

- Energy efficiency labelling system:** Voluntary star labelling for ceiling fans was introduced by BEE in CY 2019 and star labelling has been mandated in CY 2023. The evolution of this category with good practices around energy efficiency is pivoting the market towards branded play. Unbranded play does not subscribe to energy efficiency, safety practices, standardization etc. and the only leverage they have is price. Owing to the energy efficiency rating system, it would be difficult for them to compete in the market and eventually they would be crowded out by branded play. The overall Indian ceiling fan market would eventually converge into all fans being star rated.
- Entry of new players as part of their product extension growth strategy:** Strategic investments and brownfield expansion in fan sector by players in the adjacent categories have enabled the growth of branded share. For example, Havells delved into fans category as part of their business diversification strategy in CY 2003. In CY 2014, Polycab diversified its portfolio by entering into fans segment. Challenger brands like RR Kabel, who were already present in economy and standard segment of fans, forayed into premium segment in CY 2022 through brownfield acquisition of Luminous Power's home electrical business (HEB). The sector has also witnessed greenfield expansion into branded play of various players such as Atom Berg, Halonix Technologies etc. pitched around energy efficient fans. Henceforth, these have led to increase in market share for branded play. This also implies that while approximately 90% of the total branded market is controlled by 4 to 5 players, going forward it is expected that 95% of the branded play will be split across nearly a dozen players that would include players like Havells, Crompton Greaves, RR Kabel, V-Guard etc.

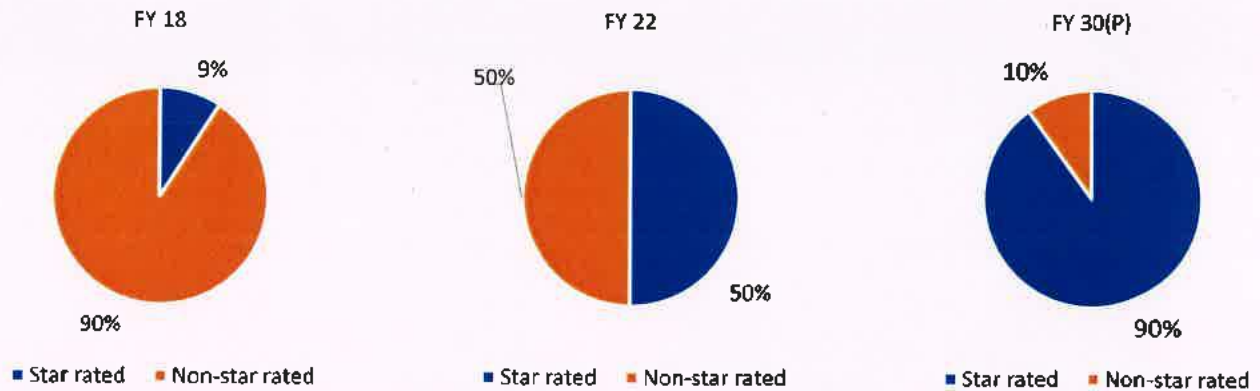
Energy Efficiency

Demand for energy efficient fans has been rising as Indian consumers are increasingly aware of the advantages of having energy efficient appliances. On an average, ceiling fan constitutes 20% of the electricity consumed by an Indian household. Brushless Direct Current (BLDC) technology makes ceiling fan highly energy efficient by reducing the energy consumption to almost one-third of a regular induction motor fan. These fans are rated as 5-star energy efficient fans. Cost of BLDC fans are typically on a higher side because of the complex technology and electronics involved. Owing to the shift in consumer mindset towards energy efficient fans, leading fan manufacturers such as Crompton Greaves, Orient Electric and challenger brands like RR Kabel and new entrants like Atom Berg, Halonix Technologies, have been extensively manufacturing BLDC fans over the past few years.

Introduction of mandatory norms in ceiling fans in CY 2023 is expected to enable the industry to witness a similar transition as in the lights and bulb category. Lights and Bulb category were earlier not mandated through any energy efficient norms. Introduction of voluntary and mandatory norms in LED lamps in CY 2015 and CY 2018, respectively, along with certain initiatives from government schemes, have resulted in energy efficient LED lights capturing approximately 95% of the market in Fiscal 2020, as compared to 20% in Fiscal 2014. Similarly in ceiling fans category, approximately 9% of the overall market was star rated in Fiscal 2018, which became 50% in Fiscal 2022 after the introduction of the voluntary star labelling program. In the next decade, it may reach in excess of 90%.



Exhibit 4.5: Share of Star rated Ceiling Fans in Indian ceiling fan market (Fiscal Year)



Source – Secondary research, Technopak Analysis

Exhibit 4.6: Examples of Energy Efficient Fans by Players in the Ceiling Fan segment

Players	Examples of Energy Efficient Fans
RR Kabel	Luminous New York Chelsea 1200MM Ceiling Fan
Crompton Greaves	Energion HS BLDC Ceiling Fan
Orient Electric	Aeroslim BLDC motor Smart Ceiling Fan
Havells	Efficiencia Neo 1200mm Ceiling Fan
Atomberg	Efficio 5-Star Ceiling Fan

Source – Secondary research and Technopak Analysis

Premiumization

Buying behavior of Indian household for ceiling fans have changed considerably over the past few years. Increase in disposable income have increased the purchasing power of customers, which in turn have accelerated the demand for premium fans in India. Now, buyers do not view fan as a commodity which serves only the basic purpose but are also looking at their aesthetic quality which is going to add to the décor of the house. Consumers are showing more and more interest towards smart, easy-to-use, and technologically advanced products. Smart ceiling fans and IoT-enabled ceiling fans are no longer a discretionary spend but are viewed as an integral part of home interiors. The smart fans / IoT-enabled fans connect through the internet and can automatically adjust its speed as per the temperature and humidity in the room. It can be controlled via remote, mobile application and Wi-Fi connectivity. Production of smart and IoT-enabled ceiling fans, enhanced design in terms of color and aesthetics of ceiling fans, and feature reinforcement through air purification and bladeless features are expected to serve as the key drivers of premiumization in the Indian fan market.

RR Kabel has Luminous Audie 1200mm Smart Ceiling Fan in premium segment, which is an IoT enabled and Alexa compatible smart fan. Orient Electric has also launched an Aeroslim fan, which is enabled with IoT technology that enables users to manage fan speed and modes, reverse rotation and under light with dimming options via a mobile application.

Key Growth Drivers of Domestic Fan Market

Apart from growth drivers impacting the electrical consumer market like rural electrification, increase in retail, commercial and residential establishments and various policy interventions by Government of India, there are a few sector specific growth drivers of the domestic fan market.

Premiumization

Indian fan market is witnessing increased demand for premium fans as there has been a shift in consumer mindset towards products which are smart, have enhanced design in terms of color and aesthetics and have superior functionalities. The reason for the same can be attributed towards increase in disposable income of people, which has increased the purchasing power of customers. The premium segment of fan market is constituting approximately 20% market share by value in Fiscal 2022, as opposed to approximately 5% market share in Fiscal 2015. It is projected to constitute approximately 28% market share by value by Fiscal 2027.

Shift towards Branded Play

Currently the share of branded market in India is approximately 90%. Owing to energy efficiency norms and heightened consumer awareness towards quality and safety, the Indian fan market is pivoting towards branded play and is expected to grow as high as approximately 95% by Fiscal 2027. Reduced urban replacement cycle as well as premiumization are also playing a pivotal role in driving the market towards branded play.

Increase in Replacement Demand

Increase in disposable income and shift in consumer mindset from viewing a fan as a basic commodity to something that is going to add to the aesthetics and décor of the house, is driving the replacement demand of fans in India. In Fiscal 2022, approximately 4 million units of ceiling fans were sold as replacements. Replacement demand is expected to drive growth of both economy and premium segment fans.

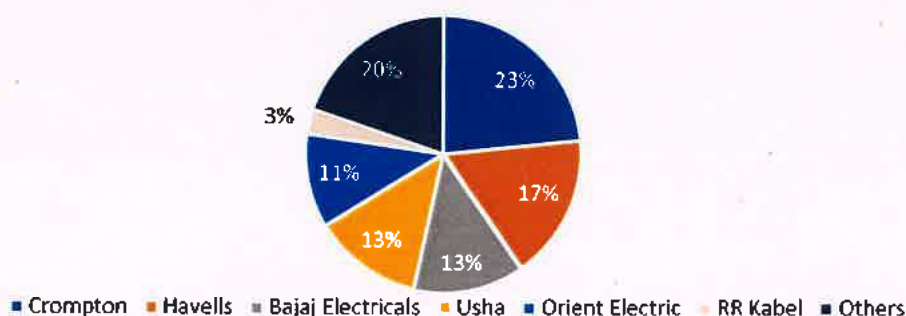
Fan as a cost-effective cooling proposition

Fan is a very cost-effective cooling proposition over all other established mediums in the market. One of the key reasons for ceiling fan to continue to grow in a market like India is because of its proposition to provide cooling and comfort for value. There is no other product / technology that can replace fan to cater to the value proposition that is being offered. Air conditioning has issues around affordability and installation. That is why, in spite the core technology of fans now commoditized, and their demand being plateaued in developed markets, their proposition around affordable convenience continues to witness a growing demand in a developing and price sensitive market like India.

Key Players in the Industry

Indian fan market is primarily dominated by branded players, controlling close to 90% of the market. 4-5 leading players garner close to 80% of the market. These leading players include Crompton Greaves, Havells, Bajaj Electricals, Usha and Orient Electric. Crompton Greaves is the market leader having approximately 23% market share by value, followed by Havells (approximately 17% market share), Bajaj Electricals (approximately 13% market share), Usha (approximately 13% market share) and Orient Electric (approximately 11% market share). The remaining share of branded play market is controlled by challenger brands like RR Kabel (approximately 3% market share), V-Guard etc. Fan category is a distribution led category where in the role of distributors and retail touchpoints are critical for capturing the market. Leading players like Havells have close to 14,000 distributors spread across India and have approximately 2,05,000 retail touchpoints. In the premium segment, Havells has captured approximately 45% of the market and Crompton Greaves has close to approximately 35% of the market share. Fan category serves as an important category for some of the leading players in electrical consumer durables industry, contributing close to 45-50% of the total revenue. Fans contribute approximately 62% of the total revenue of Orient Electric, whereas approximately 45% of the total revenue of Crompton Greaves and Usha comes from fan category.

Exhibit 4.7: Market share of players in Domestic Fans Market in India – By Value (Fiscal 2022)



Source – Technopak Analysis

Fan market is a distribution led retailer driven category, that behaves similarly to a non-food FMCG category. A typical value chain involves manufacturing brands, distributors, retailers and customers. Manufacturers in some cases sell directly to institutions. There are also direct dealers in the market who buy the products from brand manufacturers and sell those either to retailers or directly to the customers. Contractors, Architects, Institutional buyers and end consumers form the customer base of fan market. The distributor buys fan from brand manufacturer usually at discount of approximately 30-40%. He can garner additional discount in terms of

turnover and cash discount. Then the distributor further sells the product to retailers with a retained margin of approximately 5-7%. Retailers sell the product to end consumers with a retained margin of approximately 18-20%. In scenarios where manufacturing brands sell directly to institutions, they give a discount of approximately 40-45% on the price. Where manufacturing brands sell their products to direct dealers, they give a discount of approximately 30-40% and additional turnover / cash discounts of approximately 5-7%. Direct dealers retain a margin of approximately 5-15% while selling to retailers and approximately 16-18% while selling directly to end consumers.

Sales Channels & Share of each channel

Sales channel mix for fans in India consists of Traditional (Distribution and Trade), Modern Brick and Mortar, e-commerce, and Institutional sales channel. Fan segment is a distribution led category wherein a large and efficient distribution network plays a key role in capturing the market. In Fiscal 2022, Sales of fan through Traditional channels is approximately 80% and it is expected to continue to be a substantial channel of sales in upcoming years also. Share of e-commerce sales channel is approximately 6%. Even though the share of e-commerce is increasing, it is expected to remain less than 10% in the next 3-4 years. Modern Brick and Mortar store have a sales mix of approximately 9%. Approximately 5% of the sales happen through institutional channels (private and government projects).

Exhibit 4.8: Sales of Fan across retail channel (Fiscal Year)



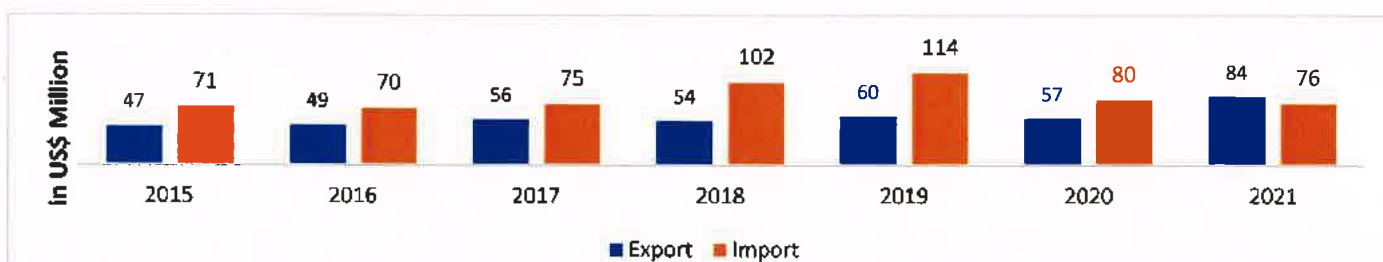
Source – Secondary research and Technopak Analysis

Exports & Imports of Fans

India exported fans valued approximately US\$ 84 million, which is approximately 5% of Indian production in CY 2021. India's fan exports constitute 1.2% of the world exports. It majorly exports to UAE constituting approximately 32% of fan exports, followed by Nepal (17%) and Ghana (9%). Approximately US\$ 76 million worth of fan products were imported from across the globe, of which imports from China accounts for approximately 74%, including high end fans or very specialized fans at customized price points. Indian fans market became net export positive for the first time in CY 2021, signifying an important milestone for the Indian Fan manufacturers and widespread acceptability of Indian fan product worldwide.

Many western countries are witnessing higher temperature than the standard norms during summers because of climate change. Such extreme temperature shift in temperate regions in the last few years, has led to a steady demand for products like fans to adjust to the new reality. Thus, going forward, climate change may unlock export potential in disruptive ways from these regions and markets, and the export potential of fan may witness growing opportunities in its favor. Some of the leading brands like Orient Electric, Crompton Greaves, Havells, Bajaj Electricals, Usha and challenger brands like RR Kabel (incl. Luminous) and V Guard export fans from India.

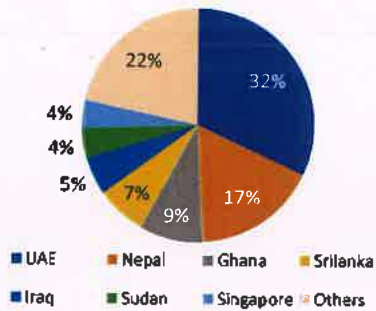
Exhibit 4.9: Export and Import of Fans in US\$ Million (CY)



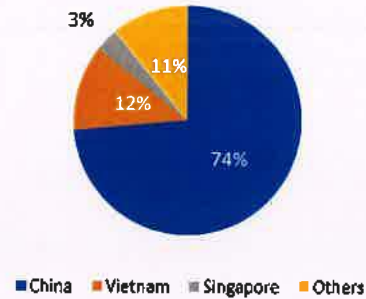
Source – Secondary research and Technopak Analysis; HS Code – 841451

Exhibit 4.10: Export and Import share by Countries for Fans (CY 2021)

Export Share by countries (CY 21)



Import Share by countries (CY 21)



Source – Secondary research and Technopak Analysis

Key Risks and Challenges

Growth of substitute products like air coolers

Substitute products to fans such as air coolers are witnessing an increase in demand, especially in residential and commercial spaces in urban areas. As these products are becoming more and more affordable, consumers are likely to opt to these alternatives, owing to their increase in disposable income.

Rising raw material cost

Inflation has been a global issue in the recent past in both developed economies like US & UK and developing economies like India. Wholesale Price Inflation ran into double digits in Fiscal 2022 in India, reaching 16.6% in May 2022, which was the highest in last 20 years. Consumer Price Inflation was approximately 5.5-6% in Fiscal 2022. These poses key challenge to fan manufacturers as inflation leads to increase in raw material costs, which eventually impacts the overall margin structure.

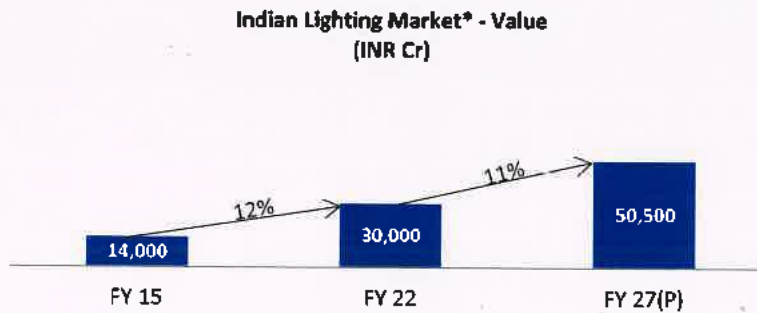
5. Lighting Market in India

Industry Overview

Lighting Market Size

The total market for lighting in India was estimated at approximately ₹ 30,000 crore in Fiscal 2022 that grew at a CAGR of approximately 12% from ₹ 14,000 Cr. in Fiscal 2015. This market is expected to grow at a CAGR of approximately 11% till Fiscal 2027 to reach nearly to approximately ₹ 50,500 crore in annual sales.

Exhibit 5.1: Indian Lighting Market – By Value (₹ Cr) in Fiscal Year



Source – Technopak Analysis

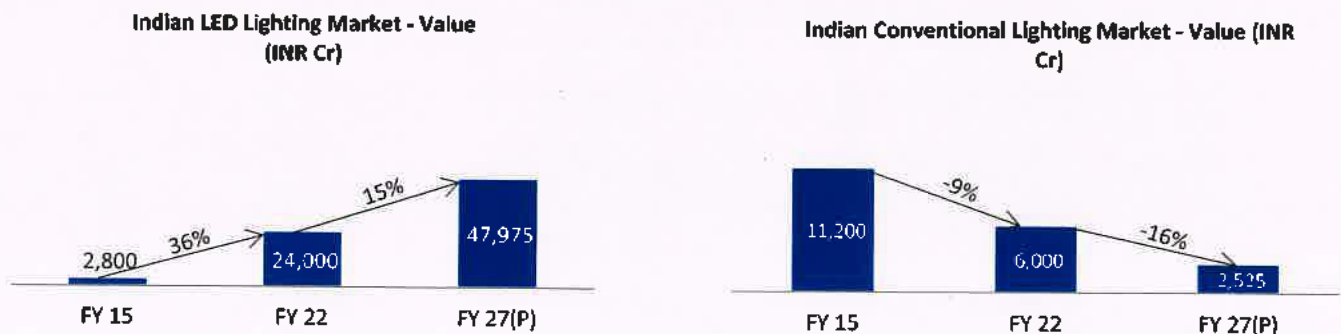
*Note-The data does not include export sales.

Key Segments of Domestic Lighting Industry

By Source Type

The lighting industry is sub-divided into LED and conventional lighting. LED makes up 80% of this industry (up from approximately 20% in Fiscal 2015) as of Fiscal 2022 and it is projected to reach 95% by Fiscal 2027. This is largely due to awareness of consumers towards, among other things, energy efficiency, longer life span of LEDs and reliability. Eventually, LED segment is expected to completely replace conventional lighting.

Exhibit 5.2: Composition of Indian LED and Conventional Lighting Market – By Value (₹ Cr) in Fiscal Year



Source – Secondary research and Technopak Analysis

By Product Type

The lighting industry can be sub-divided into three key segments - bulbs, tube lights and downlights and panels. Bulbs account for approximately 50% of the lighting industry in India, followed by downlights and panels constituting approximately 30% of the industry and the balance of approximately 20% is contributed by tube lights. While bulbs and tube lights are primarily used in households and restaurants (including for decorative purpose), downlights and panels are primarily installed in commercial establishments and workplaces.

Exhibit 5.3: Break up of different segments of Lighting Industry in India (Fiscal Year)



Source – Secondary research

Basis price points, the lighting market can be categorized into two price segments namely economy and premium.

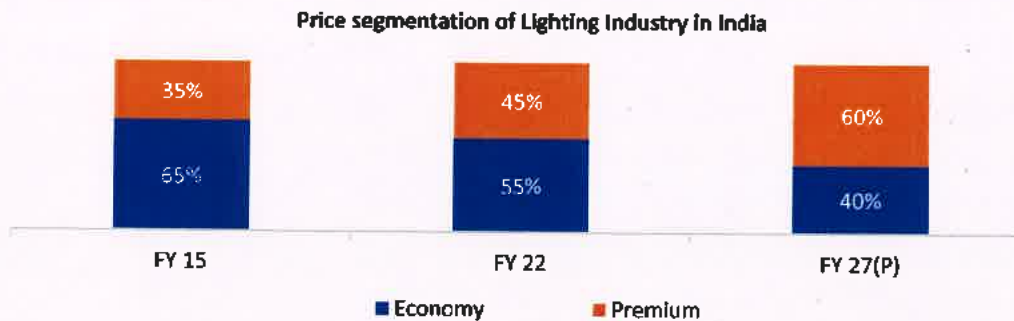
Exhibit 5.4: Price segmentation of Lighting Industry

Segment	Bulbs	Tube lights	Downlights & Panels
Economy	✓✓✓	✓✓	✓✓✓
Premium	✓✓	✓✓	✓✓

The above segmentation is as per Fiscal 2022.

Source – Secondary research

Note: ✓- Low penetration, ✓✓- Medium penetration, ✓✓✓- High penetration



Source – Secondary research and Technopak Analysis

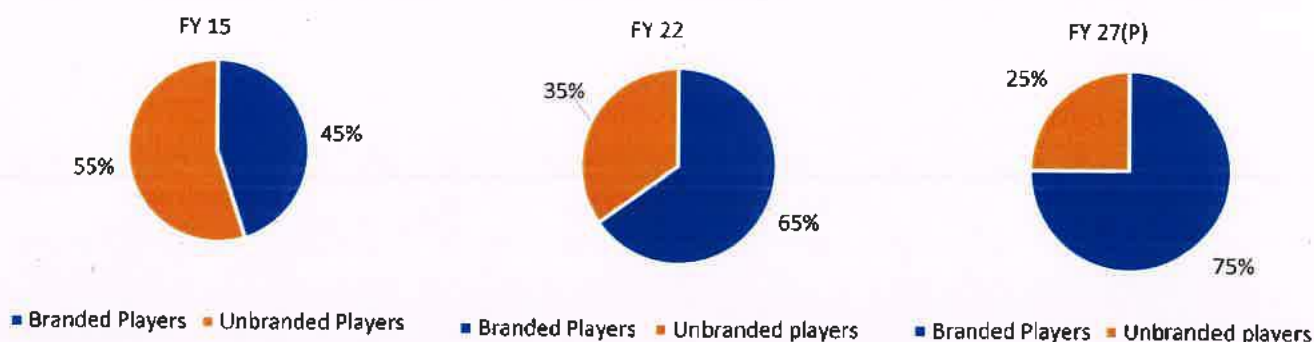
The lighting industry in India is steadily shifting towards premium segment, with approximately 45% market share in Fiscal 2022, as opposed to approximately 35% market share in Fiscal 2015. Many leading and challenger players are launching premium category of lighting. Havells has launched a Glamax smart batten, Aurom smart down lighter which can be operated using smartphone to alter the brightness or changing colors as well. The premium category are expected to contribute approximately 60% to the lighting market by Fiscal 2027.

Trends shaping the Domestic Lighting Market

Branded players compared to unbranded players

As of Fiscal 2022, Indian lighting market is disproportionately distributed between branded and unbranded players with branded players occupying approximately 65% of the market (up from approximately 45% in Fiscal 2015). Top five branded players including Philips, Havells, Crompton Greaves, Surya and Syska contributed ₹ 9,000 crore to the overall market in Fiscal 2022. Challenger brands such as Halonix, Bajaj Electricals and RR Kabel contributed approximately 15% to branded play in the lighting market. Branded players are estimated to capture approximately 75% market share by Fiscal 2027.

Exhibit 5.5: Share of branded player vs Unbranded player in Indian Lighting Market



Source – Technopak Analysis

Apart from the advent of the GST regime, consolidation of branded players in the lighting market over unbranded players is driven by below mentioned factors:

- Energy efficiency:** The evolution of lighting category with norms and practices around energy efficiency is pivoting the market towards branded players. As per the revised mandate by BEE, manufacturers are bound to display star ratings and luminous efficacy on the lighting products especially LED products with power consumption in the range of 3 watts to 25 watts. To support this, Govt has banned a few ranges of conventional lights and has also mandated the application of LED lights in all government buildings. In addition, Bureau of India Standards (“BIS”) prohibits manufacturers of LED lighting products to produce, store, sell, import, export or distribute goods if the product is not approved by BIS or if the products do not comply with the set Indian standards. Unbranded players do not subscribe to, among other things, energy efficiency, safety practices and standardization and the only leverage they have is price. Owing to the energy efficiency rating system and standardization norms, it is likely to be difficult for them to compete in the market and they would likely be crowded out by branded players eventually.
- Institutional sales:** Institutional sales is one of the major drivers for branded players as unbranded players cannot participate directly in any form of government initiatives. Various government schemes such as Unnat Jyoti by Affordable LEDs for All (“UJALA”) and Street Lighting National Program (“SLNP”), that mandate the use of LED lights by replacing the conventional lights, support new demand for lighting products and play a critical role towards institutional sales thereby, increasing the demand for the branded players in the lighting industry.
- Entry of new players as part of their product extension growth strategy:** Strategic investments and innovative expansion in lighting sector by players in the adjacent categories such as Panasonic and RR Kabel, have enabled the growth of branded share. The branded players have introduced a new range of products in this segment such as smart lighting and internet of things (“IoT”) enabled lighting, thereby shifting the demand towards branded players.

Premiumization

The lighting market is absorbing the drivers of premiumization with the increase in disposable income of people, production of smart and IoT-enabled lightings, which can be directly connected to smartphones and other gadgets to control the system without any cable connectivity. This has resulted in increased demand for technologically advanced and aesthetic lighting products. Many leading and challenger players are launching premium category of lightings. For instance, Havells has launched Aurom smart down lighter which can be operated using smartphone to alter the brightness or changing colors as well.

Trends	Behavior
Smart lighting	Usage of main power lines to carry data to and from LED light fittings and everything is controlled without any cabled connectivity.
Built-in technology	Upcoming trend for the seamless look of built-in lights leveraging the fact that LED lights last much longer than ordinary ones.
Light fidelity technology (“Lift”)	Technology where light and not radio waves transmit data between two endpoints and its penetration through wall is visible thereby alerting the consumer of unwanted intrusions.
IoT	IoT is a technology which not only connects smartphones and computers, but can also connect gadgets with household LED lights

Shift towards Built-in Downlights and Panels

Built-in downlights and panels are majorly used at commercial establishments and workplaces. Going forward, Technopak is expecting built-in downlights and panels to witness an increased demand in the lighting market and become a preferable choice in the future as compared to bulbs and tube lights owing to the issues such as warranty, thereby making bulbs less desirable.

LEDification- Technology shift towards LED altering the market structure aided by policy push

The Indian lighting market marked transition towards LED lights is due to various benefits specified below:

- **Energy efficiency** - LED lights consume 75% less energy, lasts 25 times longer than conventional lights and has high intensity, brightness and reliability. This has also been aggressively aided by various government initiatives such as UJALA and SLNP scheme.
- **Lower cost of ownership** - LED lights last much longer as compared to the conventional lights. This makes it affordable for consumers, when its price is viewed in the context of the lifecycle of ownership and encourages them to shift toward LEDs.
- **Innovation in new technologies**- Various smart lighting and IoT enabled technologies in LEDs have pushed manufacturers to innovate and launch new models in LEDs such as wireless lighting with sensor connectivity which has spurred the demand in the urban population whose living standards have improved with rising affordability for them. This trend is expected to continue growing in the coming years.

Focus on localization of components for lighting industry

Indian manufacturers are largely dependent on imports for sourcing the major LED components. This puts margin pressures on domestic manufacturers and the industry faces intense competition from Chinese imports. Also, there is increased competitive intensity that has been enabled by the entry of regional and local players that offer similar products at a cheaper price. These two factors of limited value addition in terms of LED components and competitive intensity, leads to reduced profit margins in the industry.

However, "Make in India" and "Atmanirbhar Bharat" initiatives by government that focuses on local manufacturing potential in India has included localizing of LED supply chain under its gambit. Under this policy initiative, the government has introduced PLI scheme for white goods to manufacture components and sub-assemblies of Air Conditioners and LED lights with a budgetary outlay of ₹ 6,238 crore. Currently, India imports 70% of the raw materials from other countries (China, Taiwan, Southeast Asia) to manufacture LEDs. Philips Lighting (Signify) is among the early adopters of this scheme that has started localization of components and now approximately 98% of the products are being locally manufactured by India.

Key Growth Drivers for Domestic Lighting Industry

Apart from growth drivers impacting the electrical consumer market like rural electrification, increase in retail, commercial and residential establishments and various policy interventions by GoI, there are a few sector specific growth drivers of the domestic lighting market.

Premiumization

Indian lighting market is witnessing an increased demand for premium lighting features as consumers are showing more interest towards smart, easy-to-use, and technologically advanced products. Production of smart and IoT- enabled lightings such as wireless lighting where everything is controlled without any cable connectivity, built-in technology for the seamless look, Lifi, IoT which will connect smartphones, computers and other gadgets with household LED lights, sensor connectivity and automation lighting control to be operated with remote for those smart lighting solutions, are expected to serve as the key drivers of premiumization in the Indian lighting market, which in turn is expected to boost the overall demand for the lighting industry especially in the premium and super premium range.

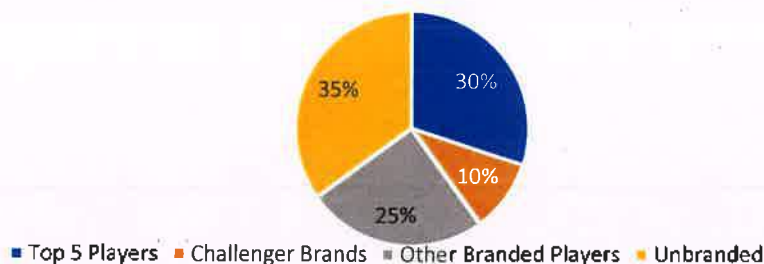
Replacement Demand

The awareness towards energy efficiency in urban population has led people to replace conventional lights with LED. Further, an increase in installation points of lights per household or workplaces is a key driver to increase demand for lighting products. With an increase in disposable income of people, consumers are showing more interest towards smart, easy-to-use, and technologically advanced products such as built-in lights or smart LED lights thereby, creating a demand for these products that can be replaced and used in new and existing constructions.

Key Players in the Industry

The leading players in the lighting industry include Philips, Havells, Crompton Greaves, Surya and Syska. Philips is the leader in Indian market with approximately 10% market share, followed by Havells and Crompton.

Exhibit 5.6: Market share of players in Domestic Lighting Industry in India (Fiscal 2022)



Source – Technopak Analysis ; Note- Leading players include Philips, Havells, Crompton Greaves, Surya and Syska. Challenger brands include players like Wipro, Panasonic, Bajaj Electricals and RR Kabel.

Lighting market is a distribution led retailer driven category, that behaves similarly to a non-food FMCG category. A typical value chain involves manufacturing brands, distributors, retailers and customers. Home buyers, institutions, contractors and architects form bulk of the customer base of the lighting market. The distributor buys lights from brand manufacturer usually at discount of approximately 30-40% and garners additional discount on upfront payment and volumes. Then the distributor further sells the product to retailers with a retained margin of approximately 5-8%. Retailers sell the product to end consumers with a retained margin of approximately 15-18%. In scenarios where manufacturing brands sell directly to institutions, they offer a discount of approximately 40-45% on the listed price. In cases where manufacturing brands sell their products to direct dealers, they offer a discount of approximately 30-40% and an additional turnover / cash discount of approximately 5-6%. Direct dealers sell to consumers with a retained margin of approximately 5-15%. Additionally, trade labels also exist along with the branded play in the lighting market. Price opacity and high margin play (going as high as 100%) are distinct features of the unstructured value chain of these trade labels.

Sales Channels and Share of each Channel

Sales channel mix for lights in India consists of traditional (distribution and trade), modern brick and mortar, e-commerce, and institutional sales channel. The lighting industry is a distribution led category wherein a large and efficient distribution network plays a key role in capturing the market. In Fiscal 2022, Sale of lighting products through traditional channels is approximately 70% and it is expected to continue to be a substantial channel of sales going forward. Share of e-commerce sales channel is approximately 10% and modern brick and mortar store have a sales mix of 5%. Approximately 15% of the sales happen through institutional channels (private and government projects).

Exhibit 5.7: Sales of Lighting across retail channel (Fiscal Year)

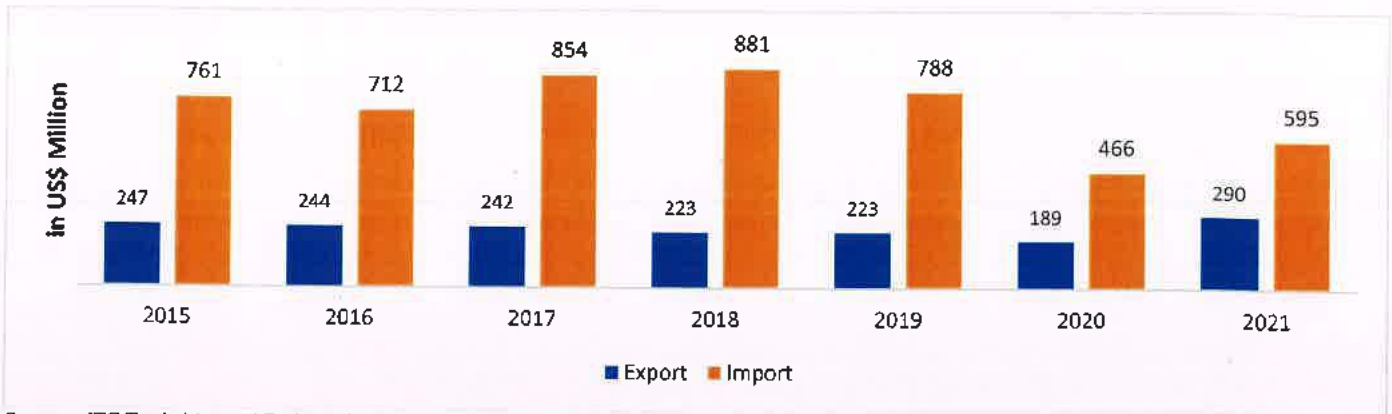


Source – Secondary research and Technopak Analysis

Exports & Imports of Lightings

India exported lighting products worth US\$ 290 million in CY 2021. India majorly exports to USA constituting approximately 30% of exports, Germany (8%) and UK (7%). Approximately US\$ 595 million worth of lighting products were imported from across the globe by India in CY 2021, wherein China accounted for approximately 75% of the imports. Among the lighting manufacturers, Philips is the largest exporter in India. Philips, Havells, Bajaj Electricals are some of the leading brands that exports lighting products from India.

Exhibit 5.8: Exports and Imports of Lightings (US\$ million) in CY



Source – ITC Trade Map and Technopak Analysis, HS Code: 8539, 9405

Key Risks and Challenges

Fluctuation in currency exchange rate

Indian manufacturers are largely dependent on imports for sourcing LED manufacturing components and therefore fluctuation in rupee-dollar exchange rate is a concerning factor for the industry. These imported raw materials when exposed to exchange rate fluctuation, may result in abrupt increase in overall cost, thereby impacting the margin of the players.

Increasing competition

Several companies have entered the lighting market with similar offerings at a cheaper price thereby, reducing the profit margins. Additionally, the industry faces intense competition from Chinese imports present in the domestic market with low quality products, resulting in low margins for the local manufacturers.

Increase in GST Rates

GST rates on LED lights and components have increased from 12% to 18% in Fiscal 2022, which is expected to result in an increase in the price of LED lights and components and that will likely need to be absorbed by the consumers or the players or by both of them.

6. Switch and Switchgear Market in India

Industry Overview

Switch and Switchgear Market Size

Switches and switchgears are one of the most important components in the consumer electrical industry. Switches are used to control the electric circuits through “on” and “off” functionality. Switchgears are a centralized collection of circuit breakers and fuses to clear faults in the system, thus ensuring reliable power supply.

The total market size of switch and switchgears industry in India was collectively estimated at approximately ₹ 27,000 crore in Fiscal 2022. This has grown at a CAGR of approximately 8% from Fiscal 2015, when its size was at ₹ 15,500 crore. Going forward, the collective market (of switches and switchgears) is expected to grow at a CAGR of approximately 7% till Fiscal 2027 and reach approximately ₹ 38,000 crore of annual sales in Fiscal 2027. Switches and switchgears by virtue of their distinct functionalities are two distinct sub-segments that make up the whole category. The pecking order of key players and the competitive intensity, the products on offer and the stock keeping units (“SKUs”) mix are distinct for these two categories. For instance, while leading players have a share of 57% of the total sales in the switches category, they only have a corresponding 27% share of total sales in the switchgears category. At a collective level, both these categories have witnessed a similar growth trajectory in between Fiscal 2015 and 2022 and these categories are expected to grow at a similar level in the next five years (Fiscal 2022-Fiscal 2027).

Exhibit 6.1: Indian Switch and Switchgear Market – By Value (₹ Cr) in Fiscal Year

Source – Secondary research, Technopak Analysis; Note-This does not include exports.

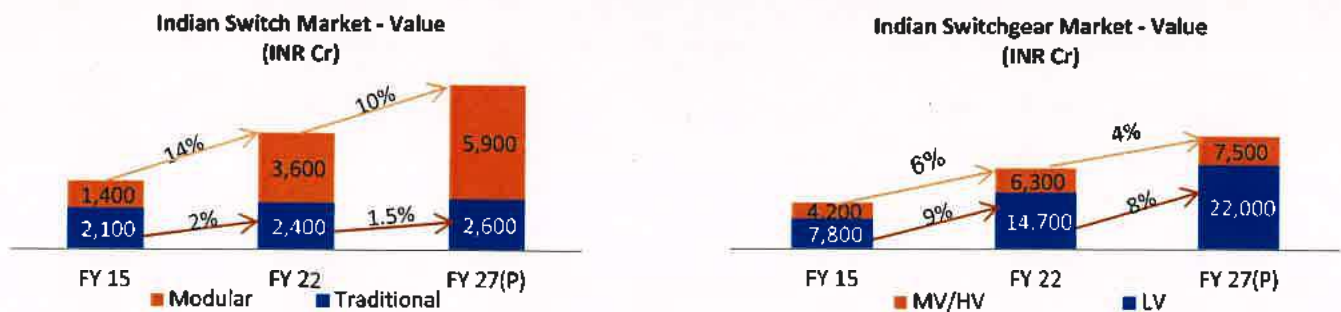


Key segments of Switch and Switchgear market

The switch industry consists of two key segments - traditional and modular switches. 40% of the switch market is made up of traditional switches and the balance 60% of the market comprises modular switches in value terms. Modular switches are four-to-five times more expensive than traditional switches and thus, hold a higher share in the market by value.

The switchgear industry consist of three key segments - low voltage (“LV”), medium voltage (“MV”) and high voltage (“HV”). LV switchgear market is largely formed by product use cases in residential and commercial real estate sectors. The MV and HV switchgears are largely deployed in industries and power utilities. LV switchgear market accounts for approximately 70% of the total switchgear and the balance 30% of the market is made up of MV and HV put together as in Fiscal 2022. This structure is expected to continue in the future.

Exhibit 6.2: Breakup of different segments of Switch and Switchgear Market in India – By Value (₹ Cr) in Fiscal Year



Source – Secondary research, Technopak Analysis

Given the nature of demand of LV switchgears due to high consumer connect and a retail led selling and distribution channel, LV switchgears’ market structure (dynamics, value chain, retailing approaches) is more similar to that of switches than to the MV/HV switchgears, which pivots to B2B industrial market structure.

Trends shaping the Switch and Switchgear Market

Shift towards branded play

Between Fiscal 2015-2022, the Indian switch and switchgear market has further consolidated towards branded players. It increased from 65% in Fiscal 2015 to 80% in Fiscal 2022. This is further expected to consolidate to 90% by Fiscal 2027.

Exhibit 6.3: Share of branded players Vs Unbranded players in Indian Switch and Switchgear Market-By Value in FY



Source – Secondary research, Technopak Analysis

Apart from the awareness among consumers to seek safety and quality and advent of GST regime, this consolidation of branded play of the switch and switchgear market over unbranded play is driven by following key factors:

- **Need for high end technological intensiveness:** The switch and switchgear industry require high end technological intensiveness which is designed with the consideration to reduce hazard to human life, loss of electricity services and economic losses due to short circuits and power outages. This requires technical know-how, certifications and licenses which unbranded players generally lack, thus making it favorable for branded players. In recent times, with increasing appreciation for devices and digital connected homes and offices that require uninterrupted and safe supply of electricity, this requirement has graduated from a discretionary choice to a common minimum demanded from the customers.
- **Safety standards laid by Central Electricity Authority of India (“CEA”):** The Central Electricity Authority Regulations, 2022 has proposed various measures relating to safety and electric supply such as training of workers and assistance of supervisors which are applicable to all electrical installation and persons engaged in related activities. These measures are actively taken care of by the branded players at the time of manufacturing of their products and during their installations. Thus, a branded player has become a proxy for reliable and functional aspects over an unbranded player.

Key Growth Drivers

Apart from growth drivers impacting the electrical consumer market like rural electrification, increase in retail, commercial and residential establishments, increase in renewable energy-based capacity and various policy interventions by GoI to boost production, exports and promote ease of doing business, there are a few sector specific growth drivers of the switches and switchgear market.

Integration of smart monitoring and control units across power grid infrastructure

The growing implementation of smart grids and smart meters across India for accurate billing and reducing fraud and technical losses has resulted in the implementation of smart power distribution devices such as smart switchgears. Smart switchgears are flexible, energy-efficient, ensures increased performance, power continuity, and resource optimization, while lowering the transmission, operational and maintenance costs. Therefore, several developments in the power distribution sector along with infrastructure development schemes by GoI are expected to positively influence the switchgear market in India.

Replacement Demand

The upgradation of aging power infrastructure to reduce the power blackouts have created a potential opportunity for the growth of switchgear market. The primary reason behind power blackouts is the lack of investments, aging infrastructure and improper regulations for modernization of the grid. However, the increasing energy demand has led to the need for a reliable and stable transmission and distribution network, leading to adoption of new regulations to lessen power cuts and upgradation of power infrastructure. Further, the replacement of traditional switches with the modular switches to ensure safety in old construction and increasing demand for new construction is likely to provide impetus to the switch market in India.

Key Players in the Industry

The leading players in the switch industry include Anchor (Panasonic), Legrand followed by Havells. Anchor (Panasonic) and Legrand lead the Indian switch market with a combined share of approximately 57% of the market by value in Fiscal 2022. RR

Kabel, a recent entrant in the segment contributes less than 1% to the total switch market by value in Fiscal 2022. Leading players in the switchgear industry include ABB, Siemens followed by Havells and Schneider. ABB and Siemens are leaders in Indian switchgear market with a combined share of approximately 27% of the market by value in Fiscal 2022.

Exhibit 6.4: Market share of players in Domestic Switch and Switchgear Industry in India - by Value in Fiscal 2022



Source – Secondary Research and Technopak Analysis

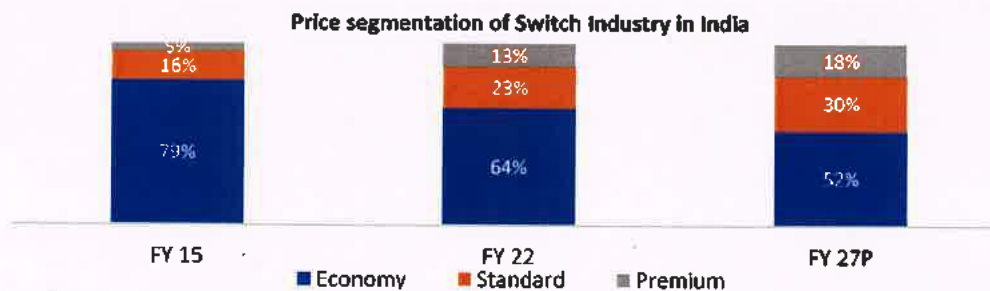
Exhibit 6.5: Key players in the Switches and Switchgear Industry

Sub-Category	Switches	Low Voltage Switchgear	Medium Voltage/High Voltage Switchgear
Leading Players	Anchor (Panasonic)	Legrand	ABB Ltd.
	Legrand	Havells	Siemens
	Schneider (L&T)	Schneider (L&T)	Havells
	-	Siemens (C&S Electric Ltd.)	-
	-	ABB Ltd.	-
Challenger Brands (Other Key and Small players)	Havells	Hager	BHEL
	GM Modular	Polycab	Schneider (L&T)
	RR Kabel	RR Kabel	-
	-	-	-

Source – Secondary Research and Technopak Analysis

Basis the operating price points, the switch market has been categorized into three price segments namely economy, standard, and premium.

Exhibit 6.6: Price segmentation of Switch Industry



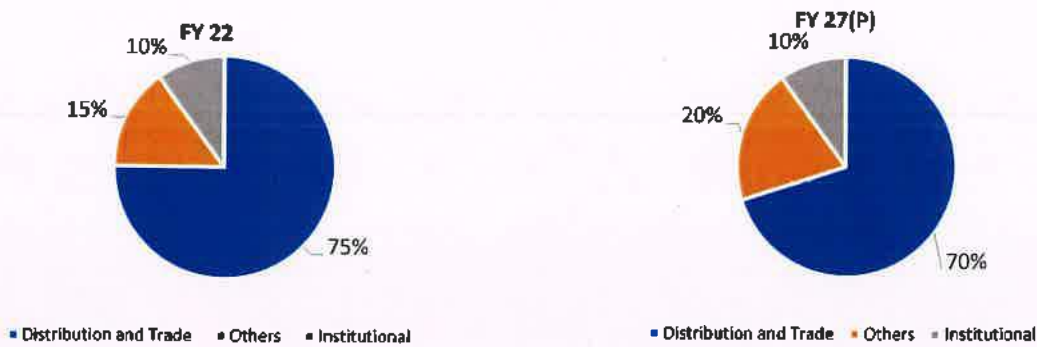
Source – Secondary research and Technopak Analysis

Note – Economy - <₹ 40, Standard – ₹ 40-70, Premium - >₹ 70

The switch industry in India is steadily shifting away from the economy segment. The non-economy segment (standard and premium put together) made up 21% of the total market in Fiscal 2015. This has increased to 36% in Fiscal 2022 and is expected to grow to 48% in Fiscal 2027. Increase in disposable income, consumer awareness and consumer demand for design, functionality and superior performance have resulted in increased demand for technologically advanced and aesthetically designed switch products. These factors have enabled this market shift between Fiscal 2015-2022. Due to these factors, leading and challenger players in the switch industry have pursued new launches in the premium category of switches as a key growth enabler.

Sales Channels

Exhibit 6.7: Sales of Switch and LV Switchgear across retail channel (Fiscal Year)

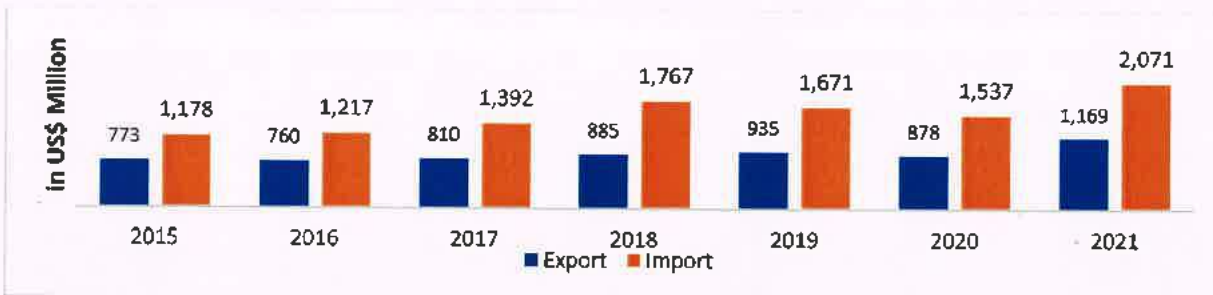


Note: Others include modern trade and ecommerce; Source – Secondary research and Technopak Analysis

Exports & Imports of Switches and Switchgears

India exported approximately US\$ 1,169 million worth of switches and switchgears in CY 2021. Exports were primarily to USA constituting approximately 18% of exports followed by Singapore (7%) and Germany (6%). Approximately US\$ 2,071 million worth of switches and switchgears products were imported from across the globe by India in CY 2021, wherein China accounted for approximately 25% of the imports. ABB Ltd., Siemens and Havells are some of the leading brands that export switchgears from India.

Exhibit 6.8: Export and Import of Switches and Switchgears (US\$ million)



Source – ITC Trade Map and Technopak Analysis, HS Code: 8535, 8536

7. Competitive Landscape

Several fundamental and long-term macro drivers and opportunities such as rising demand in housing and offices have influenced the consumer electrical industry's growth and evolution. Other factors include electrification of rural villages, investments in transmission and distribution systems, increasing efficiencies, increasing demand for renewable power generation including solar and wind energy etc. Players have evolved from B2B sales to fast growing B2C brands with the emergence of the rapidly growing category of FMEG products. B2C sales provide higher gross margin as compared to B2B sales. Leading players in consumer electrical industry like RR Kabel generate more than 75% of its revenue through B2C sales channel as of Fiscal 2022.

Certifications and R&D expenditure

ISO certifications are a must-have for organizations emphasizing on the mark on quality and credibility for any company. ISO protocols help companies in many different areas of the manufacturing and customer satisfaction process. RR Kabel is the first company in India to be REACH compliant which is the European standard to provide for a high level of protection to human health and the environment from the use of chemicals. Its products have 35 international product certifications, which is one of the highest in number among the peers in the Indian consumer electrical segment as of Fiscal 2022.

Research and development is an important aspect for the continual growth of the wires and cables and FMEG industry. With the manufacturing of technology driven products and implementation of industry 4.0, Indian companies are competing in the international market. With the increasing level of automation and inclusion of concepts like IoT, Artificial Intelligence (AI) and Machine Learning (ML), there has been a positive growth impact on the Indian FMEG Industry.

Exhibit 7.1: Certifications of key players

Players	Certifications
RR Kabel	ISO 9001, 14001, 45001, BASEC (UK), UL (USA), CSA (Canada), VDE (Germany), Intertek, CE (Europe) and TUV Rheinland (Germany), REACH (Europe), RoHS (Europe), CPR (Europe)
Finolux Cables	ISO 9001, 14001, 14000
Polycab	ISO 9001, 14001, OHSAS 18001
KEI Industries	ISO 9001, 14001, 45001, 17025, NABL, Achilles UVDB, CEOC, KEMANGCP, DNV-TAE00003U5, DNV-TAE00003U6, DNV-TAE00003U7, DNV-TAE00003U8
Havells	ISO 9001, 14001, 45001, 50001, OHSAS 18001
Bajaj Electricals	SABS, SASO, UL (USA), SIRIM, SLS, KBS, SONCAP, CE (Europe), ESMA, KUCAS, ISO 27001, 10002, 9001, 14001, OHSAS 18001
Crompton	ISO 9001, 14001, 45001
V-Guard	ISO 21702, 9001, 14001, 694, 12615, 8472, OHSAS 18001, JIS Z 2801, QCFI-JUSE, BIS

Source: Annual Reports, Secondary Research, NA- Not Available

Marketing Activities and Network of Influencers

To enhance the brands' positioning as B2C players over the years, companies have consistently invested in brand building and advertisements including Above-the-Line (ATL) and Below-the-Line (BTL) marketing. Players like RR Kabel spend 60% of its marketing expenditure on BTL activities in rural and urban areas, while the remaining 40% are spent on the ATL activities including partnering with a leading Indian Bollywood actor as brand ambassador and sponsoring Bengaluru Pro Kabaddi Team in 2019 and KKR in 2021. The marketing activities carried out by the companies in the consumer electrical industry is taking mindshare of buyers willing to invest in upgradation of their spaces and lifestyles. Brands are offering new combo deals, unique discounts and products along with their enhanced presence on online and offline platforms.

Exhibit 7.2: Marketing activities and yield (as % of revenue)

Players	Marketing Yield				Marketing expenses (Fiscal 2022) (₹ Crore)	Marketing expenses for last 3 years (Fiscal 2020-2022) (₹ Crore)	ATL	BTL	Digital
	Fiscal 2020	Fiscal 2021	Fiscal 2022	3-year average marketing yield (Fiscals 2020-2022)					
RR Kabel	1.9%	1.0%	1.1%	1.3%	49	123	✓	✓	✓
Finolex Cables	0.9%	0.5%	0.3%	0.5%	10	50	✓	✓	✓
Polycab	1.2%	0.8%	0.7%	0.9%	82	259	✓	✓	✓
KEI Industries	0.5%	0.3%	0.5%	0.5%	28	67	✓	✓	✓
Havells	3.9%	1.6%	1.8%	2.3%	247	783	✓	✓	✓
Bajaj Electricals	3.8%	4.7%	4.8%	4.4%	233	635	✓	✓	✓
Crompton	2.2%	1.7%	1.7%	1.8%	89	271	✓	✓	✓
V-Guard	2.3%	1.0%	1.6%	1.6%	57	142	✓	✓	✓

Source: Annual Reports, Secondary Research, NA- Not Available; Marketing yield= Marketing expenses/ Revenue from Operations

With respect to the marketing yield of key players in wires and cables segment, RR Kabel has a 3-year average investment in marketing of 1.3% of the total revenue, as opposed to 0.7% of the total revenue in case of its wires and cables peers (Finolex Cables, Polycab and KEI Industries).

The marketing approaches adopted by the companies in recent times have been aimed at positioning their brands as a trusted brand in terms of quality, price and transparency. Companies have carried out marketing campaigns for brand building. Brand equity is being built through Digital Marketing, TV Commercials, Celebrity Endorsements etc.

Channels for Marketing Approaches

- **Television** – It is the most expensive medium, but it also offers the largest audience reach. Companies in consumer electrical industry use this medium, both to build basic customer awareness and to announce upcoming promotions and products. They run their ads during festivals such as Diwali and occasions such as cricket matches.
- **Celebrity Endorsement:** Companies are using popular celebrity endorsements for brand building by roping in celebrity ambassadors aligned with their price positioning, customer presence and national focus.
- **Digital Media** - Use of digital media as a marketing tool has been adopted by all key players over the years. The wider reach and relatively lower cost of customer conversion in digital media makes it a medium of choice. Adoption of social media channels such as Instagram, Twitter and Facebook by the youth has given an opportunity for brands to reach consumers directly through targeted campaigns. Exposure to content on television, OTT platforms, social media networking sites and other internet avenues are making consumers abreast with new products advancements and technology. This exposure is elevating consumer's enthusiasm for lifestyle products and leading them to reconfigure their choices of FMEG products, with different products for different occasions. RR Kabel has unique loyalty programs for retailers and electricians to ensure long term relations.
- **Print Media like Newspapers & Magazines** - This channel is used by many electrical products brands usually to inform customers about upcoming promotions and products with enhanced technology.

Key Partnerships and M&A over the years

Acquisitions and mergers in consumer electrical industry have an importance on the production capacity, products available, pricing and expansion. The acquisitions of Luminous Lights & Fans HEB and Arraystorm have helped RR Kabel to enter into the premium segment of the FMEG category, mainly in fans and lights. Mergers and acquisitions help companies in many ways including backward integration, cost efficiency, production efficiency, improved R&D, economies of scale and scope. The production of copper rods, glass fibers and other raw materials enables companies to provide superior product quality and ensures the availability of raw material.

Exhibit 7.3: Key Partnerships and M&A by players in Electrical Segment

Players	Key Acquisitions	Expansion	CY
RR Kabel	Home-electrical division of Lumious from Schneider Electric	Lights & Fans	2022
	Acquired Arraystorm from Kores (India)	LED Lights	2020
	Ram Ratna Electricals Limited	FMEG	2019
Finolex Cables	Alpha Rubber Co.	Wires & Cables	1972
Polycab	Silvan Innovation Labs	IoT bases home automation	2021
	JV with Techno		NA
	JV with Trafigura	Copper Wire Rod	2005
KEI Industries	-		-
Havells	Promptec Renewable Energy Solutions	LED & Solar lighting	2015
	My Lloyd	Air Conditioners	2017
Bajaj Electricals	Nirlep Appliances Pvt Ltd	Home Appliances	2021
	Starlight Lighting	CFLs & LEDs	2021
	Trilux Lenze	Luminaires	2005
Crompton	Butterfly Gandhimathi Appliances	Kitchen Appliances	2022
V-Guard	Simon Electric Pvt Ltd	Switches & Switchgears, Fan regulators, home automation	2021

Source: Annual Reports, Secondary Research, NA- Not Available

Manufacturing capabilities

Companies have enhanced their market journeys with their state-of-the-art manufacturing facilities. Companies have also been tapping into the potential of their manufacturing capacities on the back of increasing government initiatives such as Indian Electrical Equipment Industry Mission Plan (2021-22). Under the Make in India scheme, the government is planning to establish consumer electrical industry clusters along with strong infrastructure. Through increasing roadways and highways projects, airports, power transmission and solar power projects, the government is planning to spur the infrastructure and construction activities. The Production Linked Incentive (PLI) Scheme is expected to further encourage private players to enhance their domestic manufacturing capabilities.

The Waghodia manufacturing facility for RR Kabel is one of the largest consumer electrical manufacturing facilities in India as of Fiscal 2023, with annual manufacturing capacity of 2.1 million core kilometres (CKM) of wires and cables. The manufacturing facilities are subjected to rigorous quality control checks, accreditation requirements and periodic inspections from various regulatory agencies who issue the product certifications. As a result of RR Kabel's focus on quality in manufacturing, certain products at its Waghodia facility have over 30 global accreditations and registrations, including from BASEC, UL, CSA, VDE, Intertek, TUV Rheinland and BIS.

Exhibit 7.4: Manufacturing facilities of key players and production capacity

Players	Manufacturing Facilities	Category	Units	Capacity per annum (FY 22)
RR Kabel	Silvassa, Gagret, Waghodia, Roorkee, Bangalore	Fans	Mn	1.5
		Switches & Switchgears	Mn	5.7
		Wires & Cables	Mn CKM	3.7
		PVC	MT	51,600
		Lights	Mn	4.0
Finolex Cables	Roorkee, Urse, Pimpri, Verna, Ponda	Wires & Cables	-	NA
		Switches & Switchgears	-	NA
		Copper Rods	-	NA
Polycab	23 across Gujarat (W&C), Maharashtra (Switchgears), Uttarakhand (Fans), Daman (W&C)	Wires & Cables	Mn Kms	5.2
		Switchgears	Mn	10.9
		Fans	Mn	4.2
KEI Industries	Bhiwadi, Chopanki, Pathredi, Rakholi, Chiachpada	Cables	Mn Kms	0.125
		House Wires	Mn Kms	1.3
		Communication Cables	Kms	28,800
		Stainless Steel Wire	MT	9000
		Wires & Cables	-	NA
Havells	Alwar, Baddi, Faridabad, Haridwar, Neemrana, Sahibabad, Ghiloth	Switches & switchgears	-	NA
		Lightings	-	NA
		Fans	-	NA
		AC	-	NA
		Bulbs	Units (Lakhs)	84

		Panel Lights	Mn Units	0.24
		Industrial Lights	Units	8400-12000
Bajaj Electricals	Pune (40,000MT/yr), Chakan, Nashik, Aurangabad (Nirlep Appliances)	Fans	Mn	1.5
		LED	Mn	0.7
		Starlite Lighting	Mn	4
		Lightings	-	NA
Crompton	Goa, Vadodra, Ahmednagar, Baddi	Fans	-	NA
		Fans	-	NA
V-Guard	Coimatore, Kashipur, Kala Amb, Perundai, Roorkee, Sikkim	Wires & Cables	-	NA
		Switches & Switchgears	-	NA

Source: Annual Reports, Secondary Research, NA- Not Available,
Note: data based on Fiscal 2022

Distribution and retail network

The manufacturers of wires and cables and FMEG products have also increased their share in retail sales over the past few years. With the objective of penetrating further into the markets and enhancing the presence of the brands across new territories, companies have expanded their distribution network to tier II and tier III cities. RR Kabel has one of the highest number of distributors servicing the extensive retail footprint in consumer electrical industry as on March 31, 2022, and has increased its retailer outlets by 2.4x from 24,347 in Fiscal 2020 to 58,872 in Fiscal 2022, pursuant to its undertaking of certain initiatives like Lakshya and KaRRma. Post acquisition of Luminous by RR Kabel in CY 2022, the count of their retailer outlets has increased to 97,248 as on 31st December 2022.

Exhibit 7.5: Distribution & Retail Touch Points of Key Players (Fiscal Year)

Players	Dealers/ Distributors (Fiscal 2020)	Dealers/ Distributors (Fiscal 2022)	Retails Outlets (Fiscal 2020)	Retails Outlets (Fiscal 2022)
RR Kabel	3,602	4,936	24,347	58,872
Finolex Cables	5,000+	5,600	50,000+	1,50,000
Polycab	3,500+	4,600+	1,25,000+	2,05,000+
KEI Industries	1,650	1,805	NA	NA
Bajaj Electricals	500	596	2,20,000	2,30,000+
Crompton	3,000+	4,000+	1,00,000+	1,30,000
V-Guard	NA	NA	40,000+	50,000+

Source: Annual Reports, Secondary Research, NA- Not Available

FMEG vs. Wires & Cables

The wires and cables industry are the largest part of the W&C and FMEG industry, accounting approximately 40% of the industry. At the same time, the FMEG industry has also evolved rapidly on the back of structural drivers such as changes in demography, consumer behavior, technology and rising disposable incomes. RR Kabel is one of the leading players in the W&C industry with approximately 94% of its revenue generated from the W&C segment and now has a fast-growing FMEG segment, post-acquisition of Luminous. Key players in wires and cables industry are expanding into FMEG segment because of its high adjacency with established wires and cables segment. RR Kabel's revenue contribution from FMEG segment, which is 11% for nine months ended December 31, 2022, as opposed to approximately 6% in Fiscal 2022, is highest among its peers.

Exhibit 7.6: Wires & Cables and FMEG revenue breakup for key players in Fiscal 2022

Players	FMEG	W&C	Others
RR Kabel	6%	94%	-
Finolex Cables	4%	95%	1%
Polycab	10%	87%	3%
KEI Industries	-	93%	7%
Havells	45%	33%	22%
Bajaj Electricals	78%	-	22%
Crompton	100% (80% ECD & 20% Lighting)	-	-
V-Guard	30.6%*	45.9%*	33.5%

Source: Annual Reports, Secondary Research, NA- Not Available

*V-Guard's FMEG includes kitchen appliances and air coolers, and W&C includes pumps, switchgears and modular switches.

Exhibit 7.7: Revenue contribution from FMEG for key players in Wires and Cables Market

Players	Revenue contribution from FMEG (Fiscal 2020)	Revenue contribution from FMEG (Fiscal 2022)	Revenue contribution from FMEG (nine months ended December 31, 2022)	CAGR (Fiscal 2020-22)
RR Kabel	8%	6%	11%	19%
Finolex Cables	4%	4%	4.6%	14%
Polycab	9.4%	10%	9.7%	21%
KEI Industries	0%	0%	0%	-

Source: Annual Reports, Investor Presentations Secondary Research

Export v. Domestic

The Indian wires and cables industry exported products valued at approximately US\$ 1,274 million in CY 2021, to major export markets like US, UAE, UK. The Indian fan industry exported products was valued at approximately US\$ 84 million in CY 2021, to major export markets like UAE and Nepal. The Government of India has delicensed the electrical machinery sector and allowed 100% FDI for growth of the industry. In Fiscal 2022, RR Kabel generated approximately 23% of its revenues from exports of its products to 58 countries. As of CY 2021, RR Kabel is the largest exporter of wires and cables from India, in terms of value, representing an approximately 11% market share (pertaining to FY 22 revenue of RR Kabel) of the exports market from India.

The entry barriers in electrical products manufacturing industry includes economies of scale and scope, continuous R&D, capital-intensive production, production certifications and switching costs. The Indian government is providing various incentives under the Export Promotion Capital Goods scheme, Duty Remission scheme, Focus Product scheme etc. Other steps have been taken to bridge the skill gap required for critical manufacturing by setting up of Electrical Equipment Skill Development Council (EESDC).

Exhibit 7.8: Exports vs Domestic Market in Fiscal 2022

Players	Export Countries	Exports	Domestic
RR Kabel	58 (largest exporter of W&C)	23% (₹ 1,007 crore)	77%
Finolex Cables	USA and UAE	1%	99%
Polycab	60+	7%	93%
KEI Industries	50+	10% (585 crore)	90%
Havells	60+	4%	96%
Bajaj Electricals	6 (42% growth in Fiscal 2022)	NA	NA
Crompton	NA	NA	NA
V-Guard	-	0%	100%

Source: Annual Reports, Secondary Research, NA- Not Available

8. Operational and Financial Benchmarking

Review of financial performance

1) Revenue from Operations

Revenue from operations is the top line parameter for a company's financials. Havells, Polycab and KEI Industries were the top three companies in terms of revenue generation in Fiscal 2022. RR Kabel is the fastest growing consumer electrical company among the peers in India, growing at a CAGR of 33.0% between Fiscal 2020 and Fiscal 2022.

Exhibit 8.1: Revenue from Operations in Fiscal Year (₹ Crore)

Company	2020	2021	2022	CAGR 2020-22
RR Kabel	2,479	2,724	4,386	33.0%
Finolex Cables	2,877	2,768	3,768	14.4%
Polycab	8,830	8,792	12,204	17.6%
KEI Ind	4,888	4,182	5,727	8.2%
Havells	9,440	10,457	13,938	21.5%
Bajaj Electricals	4,987	4,585	4,813	-1.8%
Crompton	4,520	4,804	5,394	9.2%
V Guard	2,503	2,721	3,498	18.2%

Source: Technopak Analysis, Annual Reports

2) EBITDA and EBITDA margin

EBITDA and EBITDA margins is largely used to compare the profitability of the companies against competitors. It is also used to standardize the business performance against the industry averages. Havells and RR Kabel have registered the highest EBITDA CAGR of 29.7% and 23.6% respectively for the period Fiscal 2020 to Fiscal 2022.

Exhibit 8.2: EBITDA (₹ Crore) and EBITDA margin (%) profiles in Fiscal Year

Company	2020		2021		2022		Fiscal 2020-2022 CAGR
	EBITDA	Margin	EBITDA	Margin	EBITDA	Margin	
RR Kabel	232	9.2%	253	9.2%	354	8.0%	23.6%
Finolex Cables	553	18.6%	671	23.6%	827	21.5%	22.3%
Polycab	1,220	13.7%	1,231	13.8%	1,353	11.0%	5.3%
KEI Ind	514	10.5%	476	11.3%	603	10.5%	8.4%
Havells	1,142	12.0%	1,759	16.5%	1,921	13.6%	29.7%
Bajaj Electricals	207	4.1%	423	9.1%	292	6.0%	18.9%
Crompton	658	14.4%	796	16.3%	816	14.9%	11.4%
V Guard	283	11.2%	333	12.1%	351	10.0%	11.3%

Source: Technopak Analysis, Annual Reports, Note: EBITDA Margin = EBITDA/ Total Income

Note: EBITDA = Profit Before Tax + Depreciation & Amortization + Finance Costs – Exceptional Items (if any)

Note: CAGR shown on basis of EBITDA value.

3) PAT and PAT margin

The profit after tax (PAT) and PAT margins are used to assess if a company's business is profitable after meeting the operating and overhead costs. The PAT margin is under pressure across all players in the industry. RR Kabel registered the highest CAGR of 32.2% for PAT for the time period Fiscal 2020 to Fiscal 2022.

Exhibit 8.3: PAT (₹ Crore) and PAT margin (%) profiles in Fiscal Year

Company	2020		2021		2022		Fiscal 2020-2022 CAGR
	PAT	Margin	PAT	Margin	PAT	Margin	
RR Kabel	122	4.9%	135	4.9%	214	4.8%	32.2%
Finolex Cables	391	13.2%	461	16.2%	599	15.6%	23.8%
Polycab	766	8.6%	886	9.9%	917	7.5%	9.5%
KEI Ind	256	5.2%	270	6.4%	376	6.5%	21.1%
Havells	735	7.7%	1,044	9.8%	1,196	8.5%	27.6%
Bajaj Electricals	-10	-0.2%	189	4.1%	124	2.5%	na(1)
Crompton	496	10.8%	617	12.6%	578	10.6%	7.9%

V Guard	188	7.4%	202	7.4%	228	6.5%	10.2%
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Source: Technopak Analysis, Annual Reports, Note: PAT Margin= PAT/ Total Income; PAT = Profit Before Tax – Tax Expenses
 Note: CAGR shown on basis of PAT value, na(1)- can't be calculated due to negative numerator or denominator or both.

4) Return on Equity

Return on equity (ROE) is a function of profit after tax and shareholder's equity. A sustainable business and increasing ROE over time can indicate a good value generation ability for the shareholders. A negative ROE indicates negative profit earned by the business. Crompton had the highest ROE among industry peers in Fiscal 2022.

Exhibit 8.4: Return on Equity for key players (in Fiscal Year)

Return on Equity			
Company	2020	2021	2022
RR Kabel	14.1%	13.9%	18.6%
Finolex Cables	13.6%	14.4%	16.3%
Polycab	22.8%	20.5%	17.7%
KEI Ind	22.4%	16.4%	19.2%
Havells	17.3%	22.0%	21.4%
Bajaj Electricals	-0.9%	12.9%	7.6%
Crompton	38.7%	36.3%	22.4%
V Guard	19.8%	18.2%	17.4%

Source: Technopak Analysis, Annual Reports, ROE = PAT/Average Shareholder's Equity

5) Return on Capital Employed

Return on Capital Employed (ROCE) indicates a company's efficiency by measuring the profitability of the business after factoring in the capital used by the company to generate profits. ROCE is a good indicator of the company's performance over long periods. Irrespective of onset of COVID-19, the industry maintained its ROCE levels in Fiscal 2021 and Fiscal 2022. Crompton Greaves had the highest ROCE in the industry in Fiscal 2022.

Exhibit 8.5: Return on Capital Employed for key players (in Fiscal Year)

Company	2020	2021	2022
RR Kabel	14.8%	13.5%	17.3%
Finolex Cables	16.3%	17.5%	18.8%
Polycab	26.6%	20.9%	20.4%
KEI Ind	24.0%	19.8%	22.0%
Havells	29.4%	33.0%	31.1%
Bajaj Electricals	8.7%	16.5%	16.2%
Crompton	69.0%	45.5%	37.7%
V Guard	25.4%	24.3%	21.6%

Source: Technopak Analysis, Annual Reports

ROCE = EBIT/ Average Capital Employed, Capital Employed= Tangible Net Worth + Deferred Tax Liabilities + Total Debt, Tangible Net Worth = Total Assets - Total Liabilities - Intangible Assets, Total Debt= Long Term Borrowings + Short Term Borrowings

6) Working Capital Cycle

Working capital cycle describes the number of days it takes for a company to convert its inventory into sales generating cash. The lower the working capital cycle, the more efficient the business is. Crompton had the lowest working capital cycle in Fiscal 2022.

Exhibit 8.6: Working Capital Cycle for key players (in Fiscal Year)

Company	2020	2021	2022
RR Kabel	98	108	88
Finolex Cables	96	114	81
Polycab	89	94	73
KEI Ind	58	101	102
Havells	38	56	49
Bajaj Electricals	144	131	89
Crompton	12	8	7
V Guard	78	80	85

Source: Technopak Analysis, Annual Reports

Working Capital Cycle = Trade Receivables days + Inventory days - Trade Payable days

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