Capital Goods

T&D – Benefiting from the new investment cycle

We continue to expect steady ordering activity in the power transmission and distribution (T&D) space based on our meetings with 6 players focused on T&D space and analysis of nearly 12 players commentaries on this space. Also, the pipeline of projects approved by the Central Electricity Authority of India (CEA) stands robust for next 2-3 years. This is likely to be positive for most players in the value chain for the next 4-5 years. This is likely to be positive for most players in the value chain for the next 4-5 years. The capex-intensive nature of the value chain and high entry barriers for new players should restrict competition to a few players having control over the supply chain. As a result, these companies can either maintain their market share or improve it over the next few years. This is also likely to result in 15-20% growth in T&D or energy segment inflows and revenues. The scope for margin improvement in the near term is high for Siemens, Hitachi Energy, GE T&D, ABB, and transformer companies. In our coverage universe, we maintain BUY on ABB (TP: INR7,500), Siemens (TP: INR6,050), Kalpataru Projects (TP: INR1,200), and L&T (TP: INR4,400). We would be more comfortable at lower valuations on Hitachi Energy (Sell | TP: INR5,466) and KEC International (Neutral | TP: INR710).

Companies

	TP (INR)	Rating
ABB India ^	7,500	BUY
Siemens $	5,900	BUY
Hitachi Energy	5,466	SELL
KEC International	710	NEUTRAL
Kalpataru Projects	1,190	BUY
GE T&D*		NA
TRIL*		NA
Voltamp*		NA
Skipper*		NA
CG Power*		NA
Techno Electric*		NA

^ABB's estimates are for CY24 and CY25 (December end) / $Siemens estimates are for FY25 and FY26 (September end) / *Bloomberg estimates

Winds of change: Powering up for sustainable growth

T&D market witnessing improved tendering

Improved tendering activity, the CEA's near-term pipeline of projects, and management commentaries of key players emphasize that the power T&D sector will continue to witness increased activity over the next few years. The spending target of INR2.4t by FY30 translates into a yearly addressable market of INR300-500b. Moreover, expected spending of INR3.3t by FY30 on distribution gives a strong addressable market for T&D players over the next 3-4 years. As per CEA and Crisil report, larger share of investment is expected to be seen in the extra-high voltage space (220kV, 400kV and 765kV). Along with this, projects worth INR1t were recommended by the NCT to the Ministry of Power during the last few meetings of the NCT. There is also an increasing shift toward larger projects, apart from HVDC projects. With products forming nearly 50-60% and design and EPC forming another 30-35% of overall spending, we expect most players in the value chain to benefit over the next few years. Companies are indicating that tendering activity has already increased in the last one year as compared to the last 5-6 years. This augurs well for sustainability of order inflows for companies focused in the power T&D space.

Demand-supply dynamics in favor of industry players

Most industry players have indicated that 1) demand for T&D products has increased sharply in the domestic and international markets; 2) the expected addition of generation capacity will boost transformer capacity as the current supply is constrained by already high capacity utilization and limited capacity additions; 3) the capex-intensive nature of the sector and higher lead times to upgrade to higher kVA ranges will limit competition to just 5-6 players, thereby giving pricing advantage; 4) unlike the last cycle, this time players are rational in bidding as the demand opportunity is much bigger; 5) after the completion of renewable and thermal power targets, the focus would shift to replacement and refurbishment demand similar to in developed countries; and 6) key risk can come from sharp volatility in commodity prices.

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Positioning of key players within the value chain

Considering a large addressable market, we believe there are ample opportunities for players across the value chain. Though there are unorganized players in the products and EPC categories, only 6-7 players control the entire value chain. Entry barriers are also high in the power T&D space as products such as high-kVA transformers need various stages of testing and approval, which take 1-3 years. We thus continue to see improved traction for players like Siemens, Hitachi Energy, GE T&D, TRIL, CG Power, BHEL and Schneider in which have presence in large projects and have offerings such as HVDC, higher kVA transformers, substations, switchgear, etc. Other players focused on transformers, sub-station and towers, such as Voltamp, TRIL, Techno Electric, Transrail, Skipper and Atlanta, are also increasing their technical capabilities to capture growth opportunities in high-kVA transformers and substations. Within the EPC segment, Kalpataru and KEC target 20-25% market share, and with the increasing size of projects, we expect L&T to also participate in the upcoming opportunities.

Improving financial metrics

Key players in the industry have seen a marked uptick in revenue and profitability in the past few quarters, driven by a) an improving demand scenario, b) healthy ordering momentum, c) improved pricing, and d) stable commodity prices. As lead times for transformers have increased globally, most players have reported higher capacity utilization and have announced expansion plans (Siemens, Voltamp, TRIL, CG Power, etc.) Consequently, margins have been on an upward trajectory for most players, led by higher capacity utilization, better product mix, and stable commodity prices, which have eased from the unprecedented highs seen in FY22. Going forward, companies expect the momentum to continue given the robust visibility in the power T&D space.

Raw material prices are subject to volatility

The basic raw material used for transformer core is cold-rolled grain-oriented (CRGO) steel as well as copper and aluminum for conductor coils. CRGO is largely imported and conductors are procured domestically. PLI scheme for specialty steel (CRGO) will help domestic players in coming years. Due to the exposure to these commodities, the industry is subject to fluctuations in raw material prices and thus has variable pricing clauses linked to indices created by the Indian Electrical and Electronics Manufacturers' Association (IEEMA). Copper and aluminum prices have started moving up in Apr'24. EPC players too have limited pricing power and were impacted earlier by a sharp swing in commodity prices.

Valuation and view

We remain positive on companies that have a presence across the transmission space, as a strong addressable market can result in 15-20% growth in T&D segment inflows and revenues. The scope for margin improvement in the near term will be higher for Siemens, Hitachi Energy, GE T&D, ABB, and transformer companies. In our coverage universe, we maintain BUY on ABB, Siemens, Kalpataru Projects, and L&T. We would be more comfortable at lower valuations on Hitachi Energy (Sell) and KEC International (Neutral).

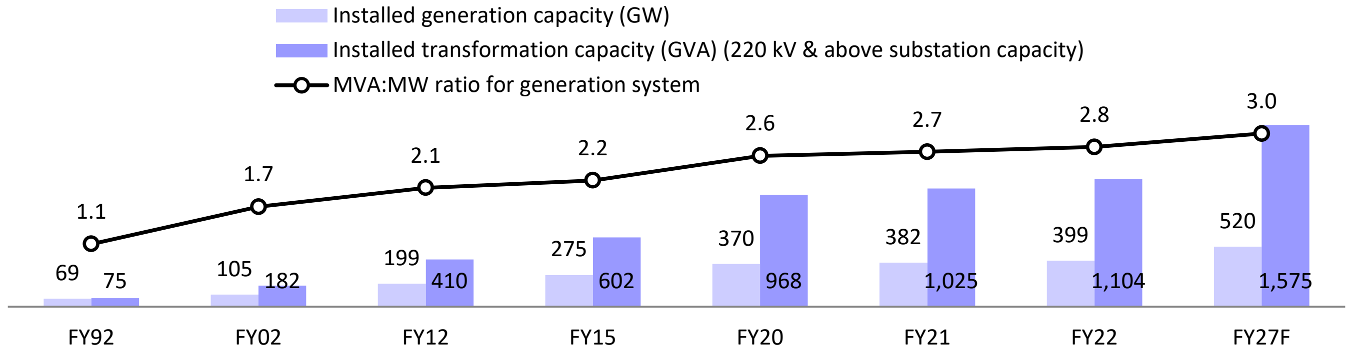
Industry growth momentum to continue

Growth to be driven by generation capacity additions

We expect growth in the transmission and substation capacity to be driven by incremental additions to the generation capacity. Historically, the ratio of transformer capacity to installed generation has been around 2.6-2.8x and with a similar ratio of ~3x for future, the expected installed transformation capacity can be around 1,575 GVA for a 520 GW generation capacity. This requires an addition of nearly 400MVA from the levels of FY23 capacity of 1180MVA. With this expected incremental requirement for transformation capacity, significant capacity expansions will be required for transformers and substations. Currently only a few players like CG Power, Siemens, and TRIL have announced capex plans. The T&D system in India operates at several voltage levels, such as extra-high voltage (765 kV, 400 kV and 220 kV), high voltage (132 kV and 66 kV), medium voltage (33 kV, 11 kV, 6.6 kV and 3.3 kV) and low voltage (1.1 kV, 220 volts and below). This time the growth is more visible across the extra-high voltage range for the transmission line as well as substations by FY30.

Moreover, the near-term pipeline of CEA approvals stands at ~INR1t, which we believe could benefit the entire value chain of players across products and EPC players.

Exhibit 1: Expected increase in installed generation capacity to 520GW by FY27E would need transformation capacity of 1,575 GVA, translating into sharp uptick in demand for transformers (transformation vs. generation capacity (MW:MVA))



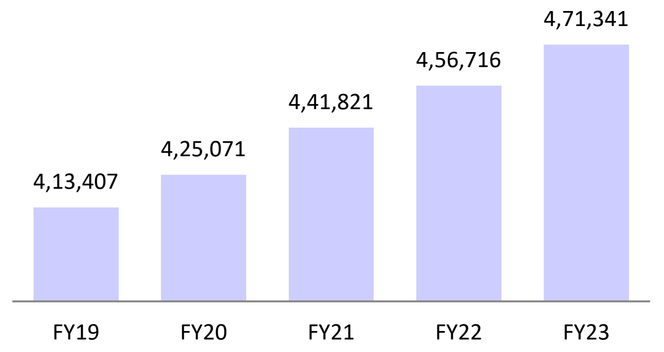
Source: CEA, Crisil, MOFSL

Exhibit 2: Planned transmission capacity additions by CEA till 2030

Transmission system type/ voltage class	Unit	Capacity additions till 2030
(a) + 800 kV	ckm	6,200
(b) + 350 kV	ckm	1,920
(c) 765 kV	ckm	25,960
(d) 400 kV	ckm	15,758
(e) 220 kV cable	ckm	1,052
Total transmission lines	**ckm**	**50,890**
(a) + 800 kV	MVA	20,000
(b) + 350 kV	MVA	5,000
(c) 765 kV	MVA	2,74,500
(d) 400 kV	MVA	1,34,075
(e) 220 kV cable	MVA	0
Total substations	**MVA**	**4,33,575**

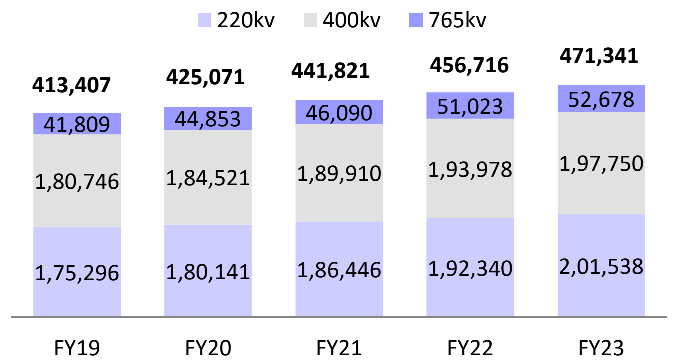
Source: CEA, Crisil, MOFSL

Exhibit 3: Current total transmission line network in the country (220 kV and above) (ckm)



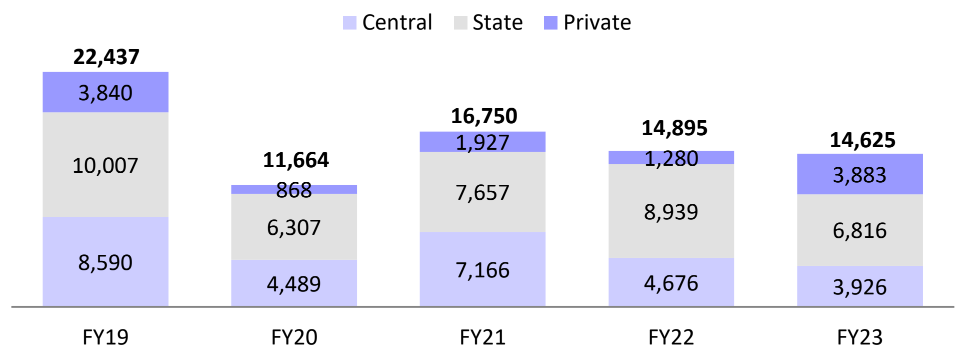
Source: CEA, Crisil, MOFSL

Exhibit 4: Strong growth in the length of high-voltage transmission lines (220 kV and above) (ckm)



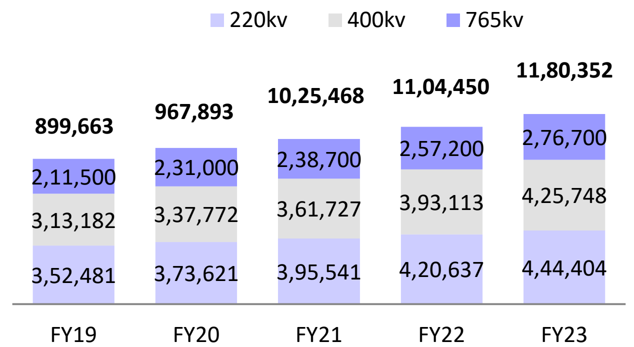
Source: CEA, Crisil, MOFSL

Exhibit 5: Sector-wise share of transmission line additions (ckm)



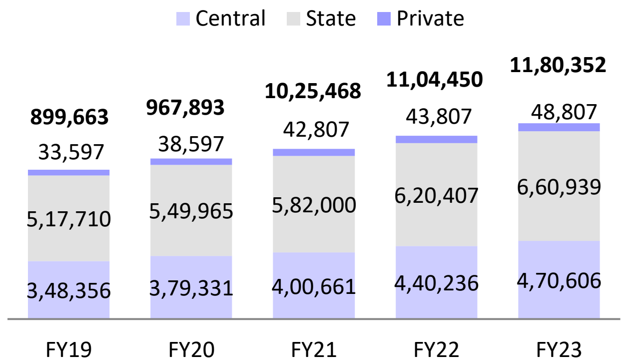
Source: CEA, Crisil, MOFSL

Exhibit 6: Robust growth in high-voltage sub-station capacity (above 220 kV) (MVA)



Source: CEA, Crisil, MOFSL

Exhibit 7: Centre and state continue to form the majority sector-wise share of substation additions



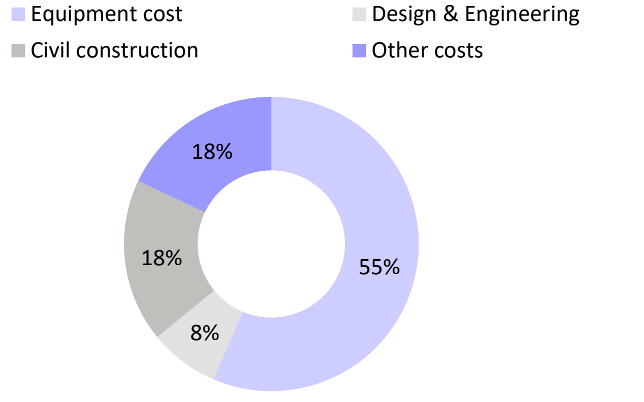
Source: CEA, Crisil, MOFSL

Exhibit 8: ISTS project approvals over last four meetings outline a strong tendering pipeline of nearly INR1t projects to be awarded over next 2-2.5 years

Transmission scheme for evacuation of power from zones	Mode	Timeframe	BPC	Est Cost (INR b)
14th meeting recommendations				
Khavda area of Gujarat under Phase-IV (7 GW): Part A	TBCB	24 months	RECPDCL	40.9
Khavda area of Gujarat under Phase-IV (7 GW): Part B	TBCB	24 months	RECPDCL	47.7
Khavda area of Gujarat under Phase-IV (7 GW): Part C	TBCB	24 months	RECPDCL	53.4
Khavda area of Gujarat under Phase-IV (7 GW): Part D	TBCB	24 months	PFCCL	34.6
Khavda area of Gujarat under Phase-IV (7 GW): Part E2	TBCB	21 months	RECPDCL	6.9
Khavda area of Gujarat under Phase-V (8 GW): Part A	TBCB	48 and 54 months	RECPDCL	248.2
Khavda area of Gujarat under Phase-V (8 GW): Part C	TBCB	48 months	PFCCL	120.0
Rajasthan REZ PhIV (Part-2 :5.5 GW) (Jaisalmer/Barmer Complex): Part A	TBCB	24 months	RECPDCL	22.0
Rajasthan REZ PhIV (Part-2 :5.5 GW) (Jaisalmer/Barmer Complex): Part B	TBCB	24 months	PFCCL	32.8
Rajasthan REZ PhIV (Part-2 :5.5 GW) (Jaisalmer/Barmer Complex): Part C	TBCB	24 months	RECPDCL	27.1
Rajasthan REZ PhIV (Part-2 :5.5 GW) (Jaisalmer/Barmer Complex): Part D	TBCB	24 months	PFCCL	22.3
Rajasthan REZ PhIV (Part-2 :5.5 GW) (Jaisalmer/Barmer Complex): Part E	TBCB	24 months	RECPDCL	32.5
Rajasthan REZ PhIV (Part-2 :5.5 GW) (Jaisalmer/Barmer Complex): Part F	TBCB	24 months	PFCCL	27.4
Rajasthan REZ PhIV (Part-2 :5.5 GW) (Jaisalmer/Barmer Complex): Part H1	TBCB	24 months	RECPDCL	36.7
15th meeting recommendations				
Integration of Tumkur-II REZ in Karnataka	TBCB	24 months	RECPDCL	7.9
Strengthening for interconnections of Bhadla-III & Bikaner-III complex.	TBCB	24 months	PFCCL	13.8
Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I in Jamnagar area	TBCB	24 months	PFCCL	38.2
16th meeting recommendations				
Network Expansion Scheme in Navinal (Mundra) area of Gujarat for drawal of power in the area	TBCB	21 months	PFCCL	23.8
Eastern Region Expansion SchemeXXXIX (ERESXXXIX)	TBCB	June,2026	RECPDCL	29.0
17th and 18th meeting recommendations				
Rajasthan REZ PhIV (Part 3: 6GW) (Bikaner Complex): Part A	TBCB	24 months	RECPDCL	59.7
Rajasthan REZ PhIV (Part 3: 6GW) (Bikaner Complex): Part B	TBCB	24 months	RECPDCL	53.6
Integration of Davanagere / Chitradurga and Bellary REZ in Karnataka	TBCB	24 months	PFCCL	34.5
Integration of Bijapur REZ in Karnataka	TBCB	24 months	PFCCL	11.1
Evacuation of power from Kudankulam Unit - 3 & 4 (2x1000 MW)	TBCB	24 months	PFCCL	5.5
Total				**1,030**

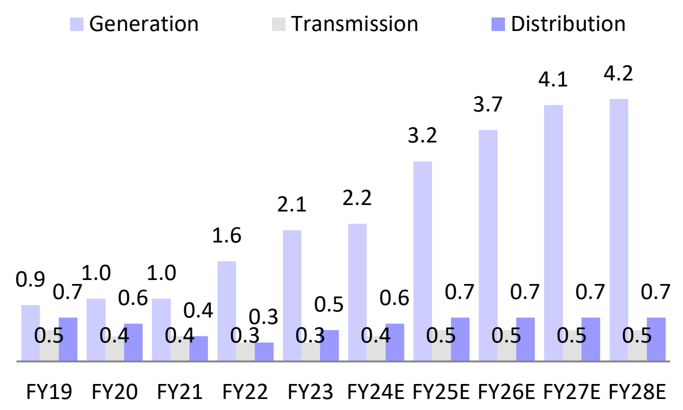
Source: CEA, MOFSL

Exhibit 9: Cost breakup of T&D infrastructure, including EPC



Source: CEA, Crisil, MOFSL

Exhibit 10: Historical and expected trends in T&D investments (INR t)



Source: CEA, Crisil, MOFSL

Views from industry experts

Key takeaways from our interaction with various players

Exhibit 11: Key takeaways from our interaction with various players

Companies	Comments
TRIL	❖ Demand for transformers has increased both globally and domestically. Currently supply is not able to keep pace with demand as capacity expansion in backward integration is not happening at the same pace as the requirement of transformers is moving. Demand is high for high-voltage transformers such as 765kVA, 440 kVA and 220 kVA, particularly in power transformers. The share of organized players in renewable T&D demand has gone up. Unorganized players do not have capacity, technology, scale and necessary approvals for manufacturing higher kVA. After the achievement of renewable and thermal targets, replacement and refurbishment demand will start kicking in similar to in developed countries.
Techno Electric	❖ Since power demand has spiked in the country, capex on T&D is increasing. For renewable, a larger capacity is needed for T&D. Techno Electric mostly does substation-related work. Out of the total addressable market of INR500-600b on a yearly basis, substations form 30-35% of the cost (INR150-180b) and Techno Electric targets a 15% market share in it.
Atlanta Electricals	❖ Players expect increased demand, particularly from domestic green energy projects. State electricity boards are also catching up selectively. Unlike the last cycle, players are rational this time in terms of bidding as the demand opportunity is much bigger. Internationally, demand from Europe and America is also high as transformers with older technology are getting replaced by newer ones, along with demand for new distribution transformers in these regions. The lead time to enter a new kVA range is also high, so entry barriers are high in the transformer industry, thereby limiting competition to 5-6 players.
Skipper	❖ Witnessing strong traction across both domestic and international markets, led by thrust on energy transition and rising power demand. Confident of achieving ~25% revenue CAGR for the coming 2-3 years. The company is benefiting from the 'China +1 strategy' and is bullish on its export footprint expansion.
KEC International	❖ Power demand is continuously going up as it is driven by general growth in the economy as well as data centers and metros, which have much higher power requirement. India T&D segment will have a positive surprise as the thrust on renewable and now even thermal has moved up. Overall, the value of projects has gone up in recent times to more than INR5-10b per project.
Kalpataru Projects	❖ The domestic transmission pipeline has improved significantly over the last 15-18 months, and now the annual addressable market is expected to be closer to INR400b. The number of bids floated by tendering agencies is higher than the bids put together in the last four years. The average size of projects has also increased meaningfully, thereby allowing only serious players in the bidding process, such as KPIL, KEC, L&T, Transrail, Skipper, and Bajaj Electricals. The company aims to increase its market share to 20-25% in the current addressable market.
Key highlights from company releases and calls	
Voltamp Transformers	❖ The enquiry pipeline is healthy and the momentum is expected to continue, led by robust investments in the power sector, primarily in renewable energy sources. The previous capex cycle (2003-08) was driven by traditional sectors such as power, steel, cement, mining, oil & gas, etc. and was primarily bank-funded. The current cycle is more broad-based in terms of funding sources as well as industries leading the investments. However, with incremental investments from MNC firms and a revival of sick units, pricing can come under pressure.
GE T&D	❖ The company is bullish on its core competencies of HVDC, STATCOM, digital substations, et al on the back of CEA's draft energy plan (NEP), which outlines the government's intent till FY32 and provides strong visibility to participants in the transmission supply chain. Green energy corridor (GEC) projects offer a strong visibility for the next 12 months and the company is confident of bagging a significant number of orders and maintaining the order inflow run rate. Though the demand scenario continues to be robust, there is enough headroom to debottleneck the current capacity, so the company has no imminent plan to expand the same.
CG Power	❖ On the transformer and switchgear side, enquiry levels are robust (~INR100b). Lead times for transformers are quite stretched (~12 months) and all the players have announced capacity expansions. The company expects a CAGR of ~10-12% in the addressable market for HV transformers. Its power transformer facility is running at ~85% capacity utilization, and in light of the demand momentum, the company has announced a capex of ~INR310m to increase the installed capacity by ~10,000 MVA.
Siemens	❖ The company sees a healthy opportunity pipeline in renewable energy integration, transmission network expansion, etc. Accordingly, the company has earmarked a capex of ~INR4.2b for the doubling of its power transformer capacity from 15,000MVA to 30,000MVA by Dec'25 and increasing the capacity of vacuum interrupter tubes from 40,000 to 70,000 by 2H2026. This will cater to domestic and export demand, which has been robust.
Hitachi Energy	❖ Hitachi is eyeing a wallet share of 20-30% in any HVDC project. It expects sharp growth in the STATCOM market from the renewable energy expansion.
Transrail	❖ The company sees a robust opportunity pipeline on the back of the government's thrust on the upgrade and expansion of the T&D network. Similarly, the outlook for the African region, where the company has a significant presence, is sanguine as a huge chunk of the population lacks access to electricity. Latin America as well is expected to see improved power sector investments, led by rising electricity demand and modernization of the existing grid network.

Source: Company, MOFSL

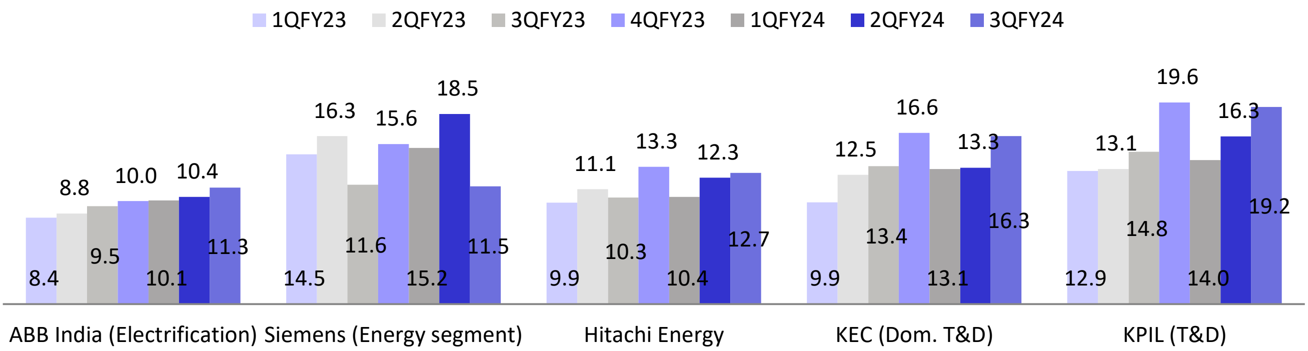
Capability mapping of various players

Exhibit 12: Capability mapping of various players across segments of T&D

Company	Offerings
ABB India	❖ AIS/GIS switchgear, circuit breaker, distribution automation, grid automation, instrument transformers, LV/MV products and systems, power transmission solutions, vacuum interrupters
Siemens	❖ Energy automation and smart grid, LV & MV power distribution
Hitachi Energy	❖ Transformers (up to 1,100 kV), HV products, grid integration (STATCOM), HVDC, grid automation solutions
GE T&D	❖ Power transformers (up to 1,200 kV), Circuit breakers (LV), GIS switchgear, instrument transformers, FACTS, HVDC, substation automation equipment
CG Power	❖ Wide range of power and distribution transformers, extra-high voltage and medium voltage (MV) circuit breakers, switchgears, EHV instrument transformers, lightning arrestors, isolators and vacuum interrupters along with substation and EPC related work
Voltamp	❖ Power and distribution transformers (up to 220 kV)
TRIL	❖ Power transformers (up to 1,200 kV), Distribution transformers (>160 kVA), Furnace transformers (220MVA/101KA), Rectifier transformers (<100KA DC), Shunt reactors (<765 kV)
Atlanta	❖ Atlanta Electricals Private Limited is engaged in manufacturing Power, Distribution and special transformers up to and including 160 MVA / 220 kV class.
Transrail	❖ EPC of power transmission and distribution (including substations), supplier of engineered products such as tower, conductor, poles and lighting, tower testing
Skipper	❖ Transmission tower manufacturing company with expertise in angle rolling, tower, accessories & fastener manufacturing and EPC line construction. In India, it is the largest transmission tower company with an installed capacity of 3,00,000 MT
Techno electric	❖ EHV substation up to 765kV, distribution system management, advanced metering, STATCOM installation up to 250MVar
LT	❖ EPC player having expertise in domestic and international market for T&D segment
KEC	❖ EPC player having expertise in domestic and international market for T&D segment
KPI	❖ EPC player having expertise in domestic and international market for T&D segment

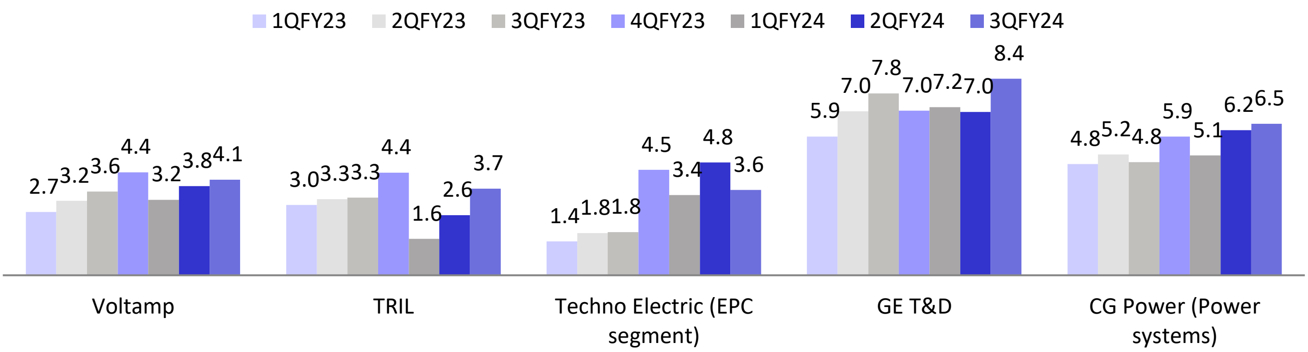
Source: Company, MOFSL

Exhibit 13: Revenues for key players have been improving for last few quarters across value chain



Source: Company, MOFSL

Exhibit 14: Revenues for transformers players too have been growing



Source: Company, MOFSL

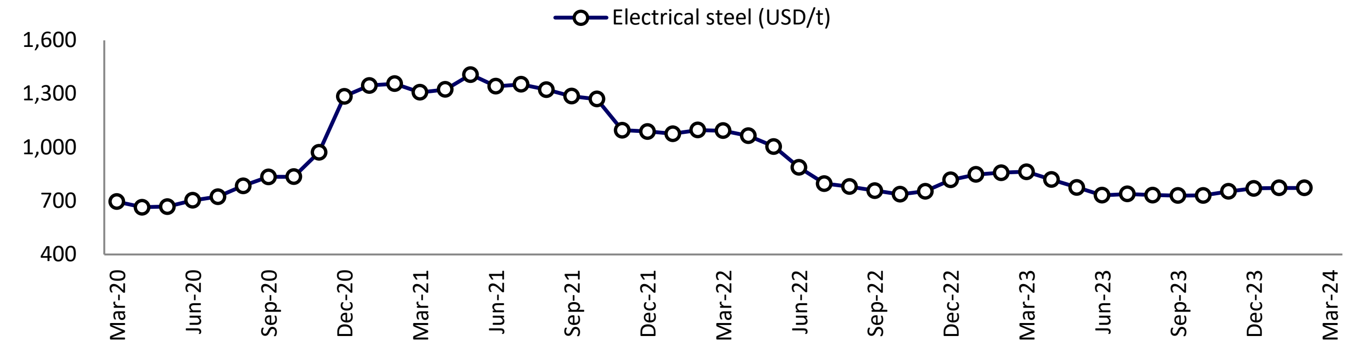
Product prices are higher despite lower RM prices

Product prices remain high despite lower RM prices

The industry is subject to fluctuations in raw material prices; hence, it has variable pricing clauses linked to indices created by IEEMA. Key raw materials used in the T&D industry are CRGO steel, copper, and aluminum. CRGO steel prices had seen a spike in FY22 but have eased significantly. Average copper price (LME price converted in INR) increased ~2% YoY in FY24, while the current spot price is ~6%/10% higher than the Mar'24/4QFY24 average. Conversely, average aluminum price (LME price converted in INR) declined ~8% YoY in FY24, while the current spot price is ~8%/10% above the Mar'24/4QFY24 average. This could lead to short-term volatility in margins. EPC players, however, have limited pricing power and were impacted earlier by a sharp swing in commodity prices.

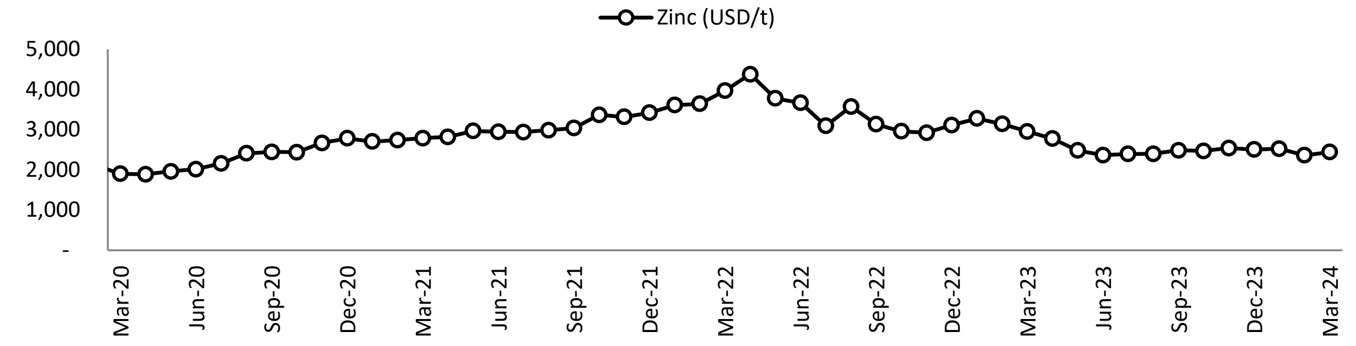
Input prices have remained largely stable in recent quarters but are now inching up

Exhibit 15: Electrical steel price trend (USD/t)



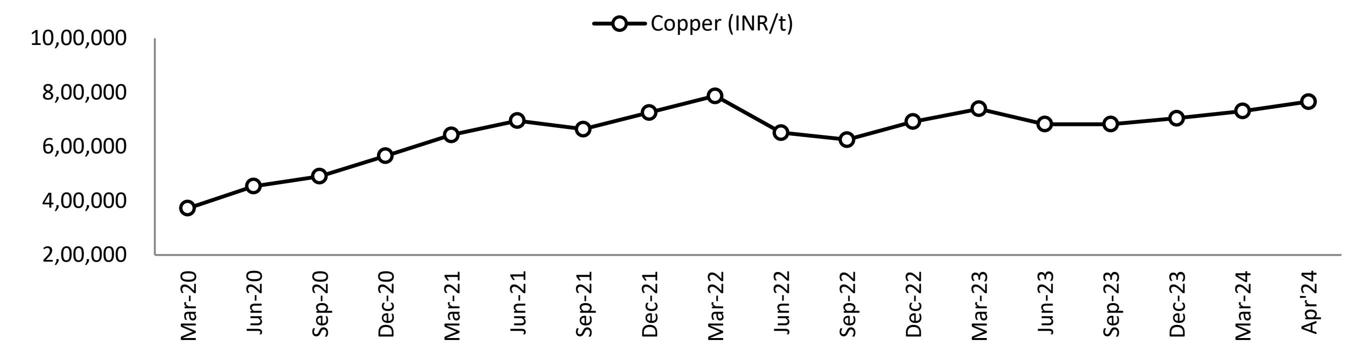
Source: Bloomberg, MOFSL

Exhibit 16: Zinc price trend (USD/t)



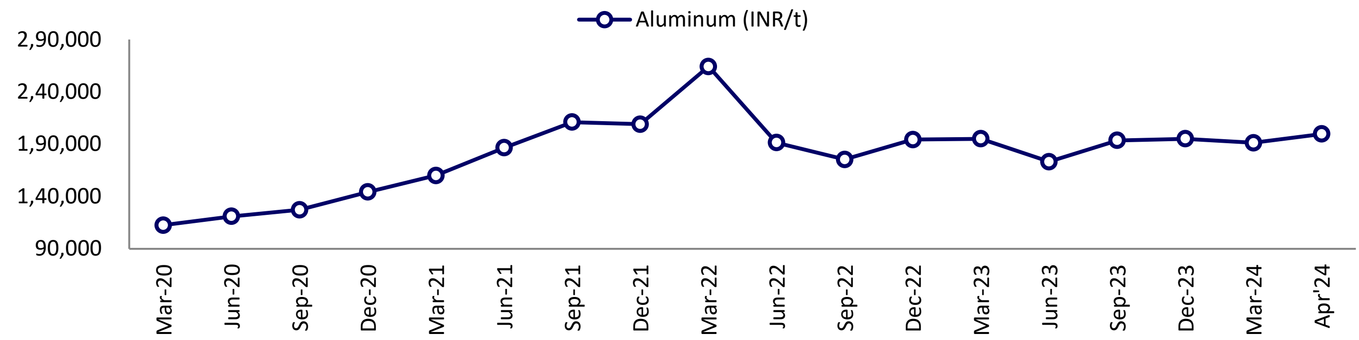
Source: Bloomberg, MOFSL

Exhibit 17: Copper price trend (INR/t)



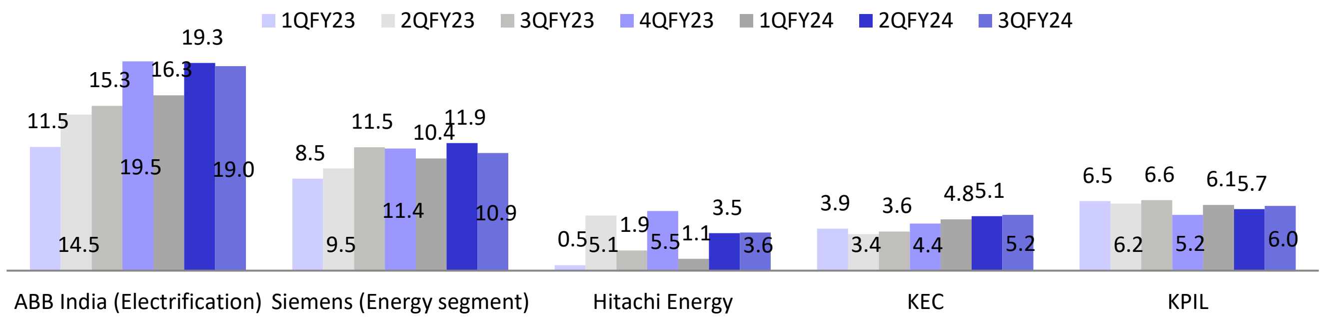
Source: Bloomberg, MOFSL

Exhibit 18: Aluminum price trend (INR/t)



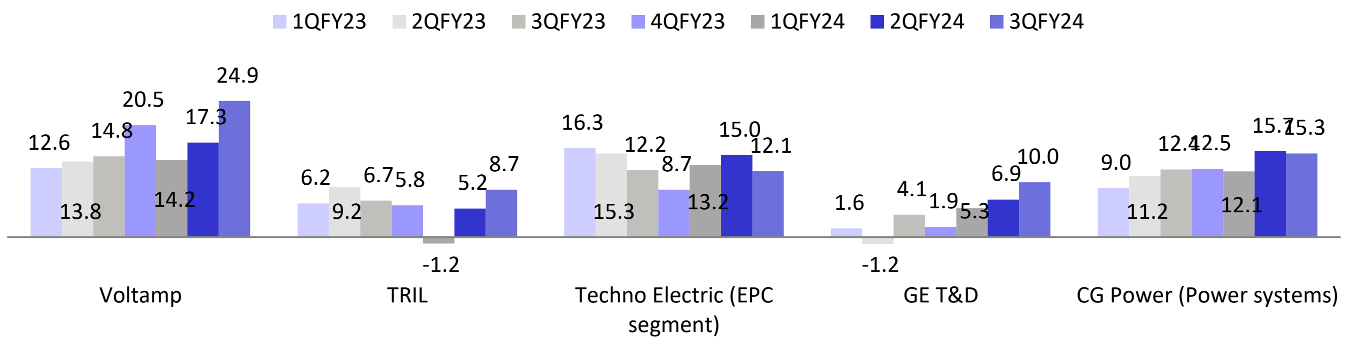
Source: Bloomberg, MOFSL

Exhibit 19: EBIT margins for most large players have been on an uptrend



Source: Company, MOFSL

Exhibit 20: Margins of transformers players too have moved up sharply over last few quarters



Source: Company, MOFSL

Valuation and view

We remain positive on companies that have a presence across the transmission space, as a strong addressable market can result in 15-20% growth in T&D segment inflows and revenues. The scope for margin improvement in the near term will be higher for Siemens, Hitachi Energy, GE T&D, ABB, and transformer companies. In our coverage universe, we maintain BUY on ABB (TP: INR7,500), Siemens (TP: INR6,050), Kalpataru Projects (TP: INR1,200), and L&T (TP: INR4,400). We would be more comfortable at lower valuations on Hitachi Energy (Sell | TP: INR5,466) and KEC International (Neutral | TP: INR710).

Exhibit 21: Valuation metrics

			Mcap	EPS (INR)			P/E (X)			RoE (%)		
Companies	**TP (INR)**	**Rating**	**(INR b)**	**FY24E**	**FY25E**	**FY26E**	**FY24E**	**FY25E**	**FY26E**	**FY24E**	**FY25E**	**FY26E**
ABB India ^	7,500	BUY	1,333	58.9	73.4	90.1	110.5	88.7	72.2	22.9	23.4	23.2
Siemens $	5,900	BUY	1,990	68.0	81.2	95.4	80.3	67.3	57.2	17.3	18.1	18.6
Hitachi Energy	5,466	SELL	349	24.7	66.0	116.9	283.7	106.2	60.0	7.9	17.5	23.6
KEC International	710	NEUTRAL	179	13.7	28.3	41.6	52.3	25.4	17.3	9.0	16.5	20.5
Kalpataru Projects	1,190	BUY	196	34.6	53.4	74.7	32.3	20.9	15.0	10.2	14.2	17.2
GE T&D*		NA	246	6.4	10.6	15.6	142.9	86.5	59.0	14.3	20.5	24.7
TRIL*		NA	94	10.8	18.2	26.0	55.8	33.1	23.2	24.3	31.0	32.1
Voltamp*		NA	102	284.4	300.4	326.3	35.1	33.2	30.6	22.6	20.6	19.7
Skipper Ltd*		NA	35	8.4	12.7	16.0	38.5	25.4	20.2	10.3	12.7	14.1
CG Power*		NA	813	5.6	6.9	8.7	90.3	73.2	58.2	40.4	37.2	35.4
Techno Electric*		NA	101	21.1	26.4	33.4	39.5	31.6	25.0	11.3	12.9	15.0

^ABB's estimates are for CY24 and CY25 (December end) / $Siemens estimates are for FY25 and FY26 (September end) / *Bloomberg estimates

Source: MOFSL, Bloomberg

Meeting takeaways with companies

transformers & rectifiers (india) ltd

Transformers and Rectifiers (India)

- **Demand environment.** Demand for transformers has increased both globally and domestically. Currently supply is not able to keep pace with demand as capacity expansion in backward integration is not happening at the same pace as the requirement for transformers is moving. Demand is coming from multiple sectors such as EPC, power, states, central utilities, Indian railways, and renewable, and is on an uptrend for the next 6-7 years. After the achievement of renewable and thermal targets, replacement and refurbishment demand will start kicking in similar to in developed countries.
- **Category of demand.** Demand is higher for high-voltage transformers such as 765kVA, 440 kVA and 220 kVA, particularly in power transformers. The share of organized players in renewable T&D demand has gone up. Unorganized players do not have capacity, technology, scale and necessary approvals for manufacturing higher kVA.
- **Capacity of TRIL.** The present capacity of TRIL is 40,000 MVA and the company is adding another 5,000 MVA by Sep'24. The current capacity utilization is around 60% and the company is taking certain operational efficiency steps to increase capacity by 20% without doing much capex. This will reduce the manufacturing time of 765 kVA transformers from 55 days earlier to 35 days. The company is getting the majority of its orders from Power Grid for 765kVA.
- **Pricing and margins.** The company is increasing prices in a calculative way and expects PAT margin of 8-9% going forward. They are working more on cost-control measures for sustainable margins. TRIL has also changed the product mix and customer mix. It has reduced dependence on state utilities and now state utilities account for just 11-12% of the company's revenues. It also depends on state utilities of UP, MP, and West Bengal, which are the best paymasters. In terms of the client mix, Power Grid and Railways account for 45% of its order book, where payments are faster. Payment from EPC players is on LC basis. The company also aims to increase exports to 20% of revenues, mainly to Europe and the US.
- **High entry barriers in transformer industry.** The transformer industry is capex intensive and also has high entry barriers in getting approvals for commercial production of the higher kVA range of transformers. It takes nearly 2-3 years for any new product to pass through the testing and trial phase.

TECHNO ELECTRIC & ENGINEERING CO. LTD.

Techno Electric

- **Addressable market in power T&D**. Since power demand has spiked in the country, capex on T&D is increasing. For renewable, a larger capacity is needed for T&D. Techno Electric mostly does substation related work. Out of the total addressable market of INR500-600b on yearly basis, substations form 30-35% of the cost (INR150-180b) and Techno Electric targets a 15% market share.
- **Distribution segment targeting smart meter projects.** The distribution segment of Techno Electric includes smart meter projects. Nearly 250m meters will be changed in India, with 110m meters already being tendered out and the rest to be tendered in a couple of years. Around 5-6 companies are increasing their

capacities for smart meter projects. Techno Electric competes with GMR, NCC, Secure Meters, Genus Power, and LT.

- **Expects data center market growth to remain strong.** Techno Electric aims to develop 250 MW of data centers with a capex of over USD1.3b in the next 5-6 years.
- **FGD**. It is also eyeing opportunities in the FGD space, where bid pricing has improved from the initial bids that came in 2019.
- **Outlook**. T&D will continue to account for a major pie of revenue, followed by FGD and then data centers. The company expects EBITDA margin of 14% despite having a tight market for equipment supplies. Due to supply chain issues and limited capacity of players in equipment, the demand-supply situation may remain tight.

Atlanta Electricals (unlisted)

- **Company**. Atlanta Electricals is engaged in manufacturing power, distribution and special transformers up to and including 160 MVA/220 kVA class. It has a capacity of 18,000 MVA and has products including 160 MVA/220 kva transformers, mobile substations, motor starting transformers, neutral grounding transformers, rectifier duty transformers, air cooled transformers, special application transformers. The company has a strong customer base, which includes state electricity boards and other priority sectors such as private electricity supply companies, steel plants, hydro power projects, windmill plants, textile units, and oil units both in India and abroad. The company has an order book in excess of INR10b. It had a turnover of INR8.6b during FY23 with EBIDTA margin of 13.72%.
- **Demand**. Players expect huge demand inflows, particularly from domestic green energy projects. State electricity boards are also catching up selectively. Unlike the last cycle, players are rational this time in terms of bidding as the demand opportunity is much bigger. Internationally, demand from Europe and America is also high as transformers with older technology are getting replaced by newer ones, along with new distribution transformers demand in these regions.
- **Limited players in higher kVA range.** It is difficult for new players to come in the 400kVA/765 kVA range as the process involves test production, trial run, certification, and testing from CPRI (Bangalore), which involves additional cost. Every design change needs approval. The entire process takes nearly 2-3 years for commercial ramp-up. Currently, Hitachi, Siemens, TRIL, CG Power, TBEA (Chinese), and BTW-Atlanta are present in the 500-765kVA, and players such as TRIL, Voltamp, Atlanta, and Technical Associates are present in categories below that. The establishment time is higher for the 765kVA range, but margins are also higher in this range.
- **State electricity companies.** The company is selectively eyeing projects from state electricity boards, such as UP, Bihar, Punjab, and GETCO, where payment terms are better.

Skipper

- **Key player in tower manufacturing**. Skipper is one of the world's largest integrated transmission tower manufacturing companies, with angle rolling, tower, accessories & fastener manufacturing and EPC line construction. In India, it is the largest transmission tower company with an installed capacity of 300,000 MT.

- **Demand.** On the back of the government's thrust on green energy, coupled with rising power demand, the company is witnessing strong traction across both India and international geographies. Accordingly, the management is confident of achieving a ~25% revenue CAGR for the coming 2-3 years.
- **Exports.** The China +1 strategy is playing out in countries such as Australia and North America, which should benefit Indian players. Notably, the company is also trying to foray into Israel, US, Canada, and the Middle East. Exports have a better margin profile (~200-300bp) vs. domestic sales, so the company is targeting export markets.
- **Market share.** Though Skipper is the market leader in transmission towers in India, it aims to further increase its market share by increasing its installed capacity of 300,000 MT, which is currently operating at ~85-90% utilization levels.

Transrail (unlisted)

- **Focus on EPC and substation related projects.** Transrail is a leading EPC company with a focus on power T&D, manufacturing facilities for lattice structures, conductors and monopoles with a presence in 58 countries. The company operates as EPC service provider and as a supplier of engineered products in the power T&D segment. Company also provides EPC services in relation to air-insulated and gas-insulated substations. Over FY21-23, the company's power T&D segment (~78% of FY23 revenues) clocked in a CAGR of ~18% owing to strong tailwinds in the sector, both in India and internationally (~53% of FY23 revenues). It had made EBITDA margin of 11% in 1HFY24. The company has an order book of INR96b as of Sep'23, out of which INR86b is from power transmission.
- **Backward integration.** The company has steadily invested in backward integration by adding manufacturing units for towers, conductors and poles. It has developed the ability to provide comprehensive solutions, including designing, manufacturing, procuring, testing and supplying of conductors and towers.
- **Demand scenario.** The company sees a robust opportunity pipeline thanks to the government's thrust on the upgrade and expansion of the T&D network. Similarly, the outlook for the African region (where the company has a significant presence) is sanguine as a huge chunk of the population lacks access to electricity. Latin America is also expected to see improved power sector investments, led by rising electricity demand and modernization of the existing grid network.

KEC International

- **Demand.** Power demand is continuously going up as it is driven by growth in the economy as well as data centers and metros, which have a much higher power requirement.
- **Improving ticket size of projects**. India T&D segment will have a positive surprise as the thrust on renewable and now even thermal has moved up. Overall, the value of projects has gone up in recent times to more than INR5-10b per project.

- **Margins.** T&D margins have potential to move up as demand has moved up.

Kalpataru Projects International

- **Strong pipeline.** The domestic transmission pipeline has improved significantly over the last 15-18 months, and now the annual addressable market is expected to be closer to INR400b.
- **Sharp increase in bids that are floated.** The number of bids floated by tendering agencies is higher than the bids put together in the last four years. The average size of projects has also increased meaningfully, thereby allowing only serious players in the bidding process, such as KPIL, KEC, L&T, Transrail, Skipper, and Bajaj Electricals.
- **Market share.** The company aims to increase its market share to 20-25% in the current addressable market.

Takeaways from conference calls and company data

Voltamp Transformers

- **Capex cycle — then and now.** The enquiry pipeline is healthy and the momentum is expected to continue, led by robust investments in the power sector, mainly in renewable energy sources. The previous capex cycle (2003-08) was driven by traditional sectors such as power, steel, cement, mining, and oil & gas, and was primarily bank-funded. However, the current cycle is more broad-based in terms of funding sources as well as industries leading the investments.
- **Key demand drivers.** Private capex recovery is on an upswing amid favorable factors, such as improved capacity utilization, healthy bank and corporate balance sheets. Notably, private investment is driven by the reorientation of global supply chains, electrification, sustainability-related capex, and initiatives such as PLI scheme, Make in India, etc.
- **Competitive intensity.** The buoyancy in demand and strong visibility are prompting players to go for capacity expansion; some MNC players have already announced ambitious capex plans. This, along with the revival of sick units, could lead to rising competitive intensity and exert pressure on prices.
- **Capacity**. Voltamp has an installed capacity of 14,000 MVA and the company has been operating at ~85-90% utilization. It has planned a capex of ~INR1.5b (entirely from internal accruals), which will enhance the capacity by a further 4,000 MVA.

GE T&D India

- **Opportunity pipeline**. There is a robust pipeline thanks to the government's thrust on renewable energy. Globally as well, there is strong momentum driven by the focus on energy transition, which is leading to the expansion of TAM across geographies. There is a clear focus on grid expansion, modernization and digitization, where GE T&D has a meaningful presence.
- **Outlook.** The company is bullish on its core competencies of HVDC, STATCOM, digital substations, et al on the back of CEA's draft energy plan (NEP), which outlines the government's intent till FY32 and provides strong visibility to participants in the transmission supply chain. GEC projects offer a strong visibility for the next 12 months and the company is confident of bagging significant orders and maintaining the order inflow run rate.

- **Business mix**. Over the past few quarters, the company has consciously reduced the share of state government orders in the order book (21% in 4QFY22 to 8% in 3QFY24), which helped the company keep its working capital under control and improve its margin performance.
- **Capacity.** Though the demand scenario continues to be robust, there is still enough headroom to debottleneck the current capacity so the company has no imminent plan to expand the capacity.

CG Power

- **Demand.** The Motors segment is seeing muted demand, which has resulted in a pricing war across the industry as newer entrants are vying for market share. However, on the transformer and switchgear side, enquiry levels are robust (~INR100b). Lead times for transformers are quite stretched (~12 months) and all players have announced capacity expansion. The company expects a CAGR of ~10-12% in the addressable market for HV transformers.
- **Capacity.** The power transformer facility is running at ~85% capacity utilization and in light of the demand momentum, the company has announced a capex of ~INR310m, which will increase the installed capacity by ~10,000 MVA. Similarly, the capacities for switchgears and HT motors will be enhanced with a collective outlay of ~INR1.9b. The company envisages ~25% revenue growth once the new capacity is commissioned.

Siemens

- **Growth**. The company is witnessing robust traction in the oil & gas, transmission and transformer segments, translating into 9% YoY order inflow growth on a high base. Margin for the year came in at 12.7%, up ~80bp.
- **Healthy pipeline.** The company sees a healthy opportunity pipeline in renewable energy integration, transmission network expansion, modernization of aging turbines, adoption of WHRS in cement plants, etc. Accordingly, the company has earmarked a capex of ~INR4.2b for the doubling of its power transformer capacity from 15,000MVA to 30,000MVA by Dec'25 and increasing vacuum interrupter tubes capacity from 40,000 to 70,000 tubes by 2H2026. This will cater to both domestic and export demand, which has been robust.

Hitachi Energy

- **Demand**. The management highlighted that macroeconomic indicators continue to be robust, and growth drivers such as renewables, T&D, railways, data centers, steel, cement, etc. are expected to witness a long-term growth trajectory on the back of the government's thrust on capex and manufacturing-led growth.
- **Inflow momentum strong.** Order inflow momentum continues to be strong from renewables and data centers, while transmission and railways have seen some moderation.
- **Large projects.** The long-term outlook also remains intact with a healthy investment pipeline in the form of HVDC, TBCB projects, metros, HSR, electrification, etc.

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