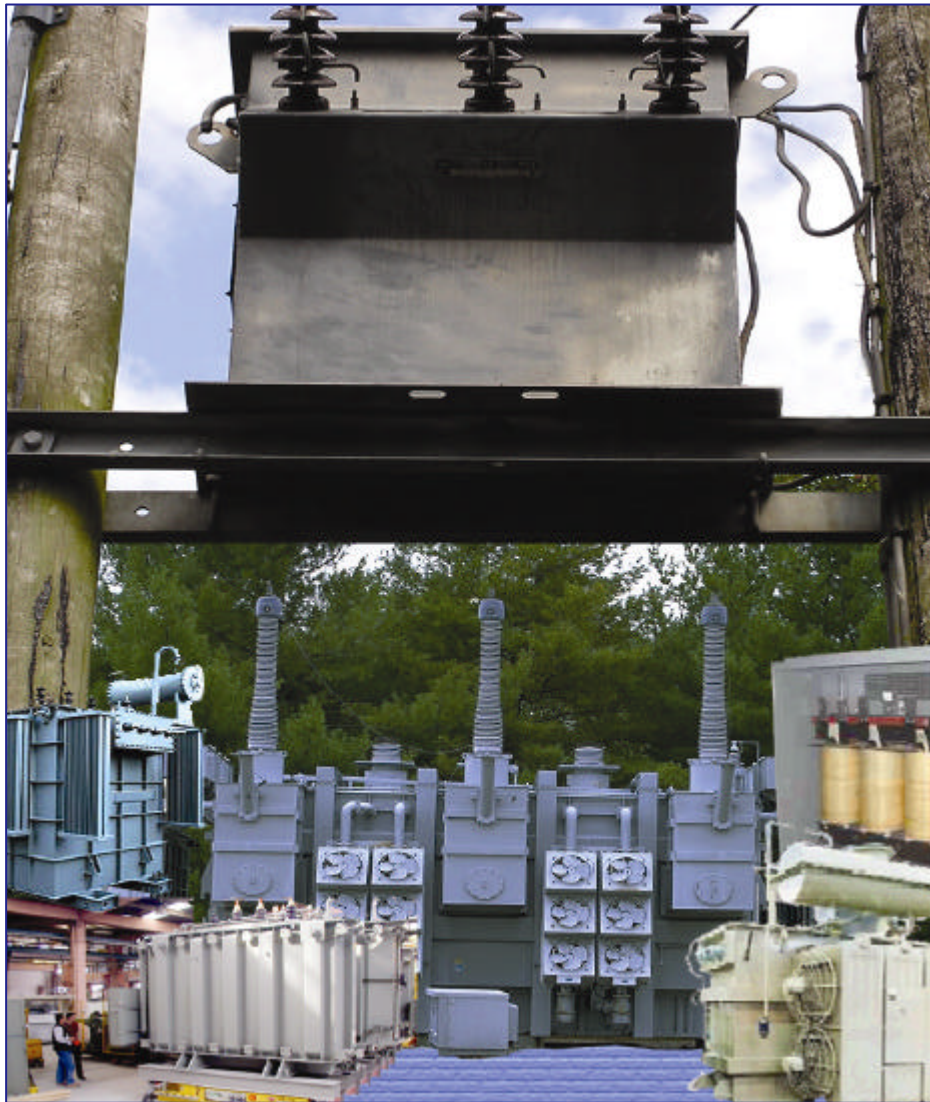


## Indian Transformer Industry



**Capitalizing on changing current**

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**February 2007**

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## Index

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Particulars	Page no.
<b>Executive summary</b>	3
<b>Indian transformer industry</b>	6
<b>IEEMA price index</b>	8
<b>Industry SWOT</b>	9
<b>Key players</b>	10
<b>Capex planned</b>	11
<b>Manufacturing process</b>	12
<b>Cost break up</b>	13
<b>Growth matrix</b>	14
<b>Valuations in the sector</b>	19
<b>Industry risks and concerns</b>	21
<b>Company section</b>	
- <i>Indo Tech Transformers Ltd</i>	22
- <i>EMCO</i>	33
- <i>Voltamp Transformers Ltd</i>	44
- <i>Bharat Bijlee Ltd</i>	52
<b>Annexure</b>	
<b>IEEMA price index formula</b>	62
<b>Formula details</b>	63
<b>Manufacturing process</b>	64

## Executive summary

The Rs55bn Indian transformer industry will benefit from the strong demand expected from reforms in the power sector. We expect the industry to witness a CAGR of 30% plus in value terms over the next five years against approximately 17% CAGR in the past three years. Improved realizations and higher volumes will largely drive this growth. The government intends to add massive capacity to the generation side and create a National Grid for distribution of this power, both of which should boost demand for transformers. The funding issues for the same have been taken care by the World Bank (WB) and Asian Development Bank (ADB).

India's transformer industry is predominantly unorganized with many small players catering to the smaller distribution transformers market. However, with times changing, many of them have graduated to the medium size category, thereby expanding the organized players base. In order to take advantage of oncoming demand, a number of companies have initiated capacity addition programs and many new players are venturing into this space.

### Annual demand of about 122,679MVA expected for the next five years

The country's installed base for transformers stands at 759,240MVA per annum (till 2004 – Source: CMIE). There are about 20 players in the organized segment with nine of them controlling about 60% of it. Installed annual capacity of these nine players will stand at approximately 105,154MVA by end of FY07. Demand for the equipment is expected to remain robust with the XI<sup>th</sup> Five Year Plan targeting an addition of about 68,000MW to the existing generating capacity. Assuming the historical achievement rate of 60%, we expect 61,050MW of additional generating capacity coming up over the next five years.

Coupled with this, demand will also stem from the replacement market where transformers installed 25-30 years ago will have exceeded the expected life span. In addition, exports to countries where power reforms are underway i.e. Africa and Middle East provide growth opportunity. Also, huge industrial capex lined up in power intensive industries i.e. oil and gas, metals and cement act as a booster.

Based on the above demand factors, we expect a strong annual demand of 122,679MVA for the next five years.

### Key beneficiaries

With robust demand expected, we believe key players in the industry i.e. EMCO, Bharat Bijlee Ltd (BBL), Voltamp Transformers Ltd (VTL), Indo Tech Transformers Ltd (ITTL), ABB, BHEL, Crompton Greaves to benefit the most. The order book position of these players is only set to move northwards with the average order book/sales being at 1.5-2x FY06 revenues. With the buoyancy in the power sector picking up, this ratio is only set to improve going forward.

### Government programs to fuel demand

The government earlier only focused on adding generation capacities but now has shifted focus to strengthening the distribution system. This, under the Rajiv Gandhi Grameen Vidhyutikaran Yojana (RGGVY), provides opportunity for power and distribution transformers over the next five years. The government intends to spend about Rs160bn over the XI<sup>th</sup> Five Year Plan for this scheme. This should help the order books of our universe companies, manufacturing medium and small power and distribution transformers, to grow over this period.

With power distribution making inroads into remote villages coupled with emphasis on reducing average dependents on each transformer, we expect the thumb rule of 7MVA transformer capacity for every additional megawatt of generating capacity to change to 8MVA. This should lead to cumulative demand of about 488,396MVA transformers for both power and distribution for additional generation capacity.

#### Imports remain a risk

Domestic players could face threat from imports in future if they are unable to cater to this upcoming demand. Increasing competition from domestic and foreign players could lead to margin contraction due to pricing pressure. Some of the larger global players viz ABB, Areva T&D and Siemens are already present in India. Since the industry is not very capital intensive, more foreign players could enter the market in future. Prequalifications with all SEBs, established manufacturing base and the wide service network should provide a competitive edge to the domestic players against foreign players.

#### We expect our universe companies to register 46% bottomline growth

ITTL will benefit from capacity expansion, which will contribute to its topline from mid FY08. It also has been successful in capitalizing on its locational advantage, which in turn leads to best margins in the industry. We expect the company to register a 53.3% CAGR bottomline growth over FY06-09E, translating into an EPS of Rs24.1 and Rs37.5 for FY08E and FY09E respectively. We recommend a BUY on the company with a price target of Rs375, an upside of 25.2%.

We believe EMCO, which has the best order book/sales ratio of 2.5x and is well diversified into project execution and meter manufacturing, will benefit from the government initiatives in the sector. It is diversifying into power generation, which will further derisk its business. We expect the company to register a 68.4% CAGR bottomline growth over FY06-09E, translating into an EPS of Rs62.8 and Rs88.9 for FY08E and FY09E respectively. We recommend a BUY with a price target of Rs1,067, an upside of 21.2%.

VTL derives 95% of revenues from industrial clients where it has a strong foothold. It leverages its position to sell high margin dry type transformers to these clients. Coupled with this the company is also prequalified with the SEBs thereby providing it a cushion during rough times. We expect the company to register a 44.1% CAGR bottomline growth over FY06-09E, translating into an EPS of Rs51.5 and Rs68 for FY08E and FY09E respectively. With a sharp run up in the stock price in the recent past, we recommend a HOLD with a price target of Rs816, an upside of 16%.

Bharat Bijlee, recently expanded capacity to take advantage of the demand from the government and industrial capex. BBL has some non-strategic investments which equates to Rs182 per share provides some cushioning to the stock. We expect the company to register a 27.8% CAGR bottomline growth over FY06-09E, translating into an EPS of Rs94.7 and Rs124.4 for FY08E and FY09E respectively. With a run up in the stock price in the recent past, we recommend a HOLD with a price target of Rs1,675, an upside of 12.8%.

#### Our recommendation

	ITTL	EMCO	VTL	BBL
Recommendation	BUY	BUY	HOLD	HOLD
Target Multiple (x)	10.0	12.0	12.0	12.0
Target Price (Rs)	375	1,067	816	1,675
Upside (%)*	25.2	21.2	16.0	12.8

Source: India Infoline Research, \*Calculated on prices as on 5th February, 2007

Universe companies

		ITTL	EMCO	VTL	BBL
Net Sales (Rs mn)	FY06	927	4,054	2,488	3,008
	FY07P	1,421	6,313	3,872	4,193
	FY08P	1,872	9,159	5,614	5,344
	FY09P	2,941	12,693	7,298	6,854
OPM (%)	FY06	18.7	12.8	13.6	17.0
	FY07P	21.5	13.5	14.0	16.5
	FY08P	21.0	13.5	14.1	16.5
	FY09P	20.7	13.5	14.2	16.5
APAT (Rs mn)	FY06	111	191	230	337
	FY07P	208	421	369	425
	FY08P	256	643	522	535
	FY09P	399	910	688	703
NPM (%)	FY06	11.9	4.7	9.2	11.2
	FY07P	14.7	6.7	9.5	10.1
	FY08P	13.7	7.0	9.3	10.0
	FY09P	13.6	7.2	9.4	10.3
EPS (Rs)	FY06	10.4	25.0	22.7	59.6
	FY07P	19.6	41.1	36.4	75.1
	FY08P	24.1	62.8	51.5	94.7
	FY09P	37.5	88.9	68.0	124.4
EV/EBIDTA (x)	FY06	15.1	14.8	19.1	14.1
	FY07P	9.1	10.7	11.8	10.8
	FY08P	7.4	8.2	8.5	8.7
	FY09P	4.5	6.6	6.5	7.7
ROCE (%)	FY06	24.6	21.6	43.0	45.8
	FY07P	33.8	17.8	50.0	43.1
	FY08P	32.2	23.0	47.8	41.0
	FY09P	38.0	26.5	45.1	42.0
RONW (%)	FY06	15.5	14.2	33.1	43.6
	FY07P	22.6	13.1	35.0	38.6
	FY08P	21.7	18.0	33.5	35.1
	FY09P	25.3	21.8	30.9	33.5
P/E (x)*	FY06	28.8	35.3	30.9	24.9
	FY07P	15.3	21.4	19.3	19.8
	FY08P	12.4	14.0	13.6	15.7
	FY09P	8.0	9.9	10.3	11.9

Source: India Infoline Research

\* Calculated on prices as on 5th February, 2007

### Indian transformer industry

A transformer is a voltage changer, used to either step down or step up power depending on its installation base. There are largely two categories of transformers based on function i.e. power and distribution transformers. Other special transformers that are differentiated on usage include welding, traction, furnace etc. Many players have the capability to manufacture up to 400kV, however with ultra mega power plants coming up, need for higher rating transformers is felt, which has opened doors for 765kV rating transformers.

### Kinds of transformers

	Power Transformers	Distribution Transformers	Dry Type Transformers	Special Transformers	Locomotive Transformers
<b>Application</b>	Used to transform power voltage from the generation point to the transmission point	Used to transform power from transmission point to the distribution to the end user	Used where chances of fire are high or there is shortage of space. This is because a special fire resistant insulation is used. It is used for many indoor commercial and small industrial activities	Special transformers like furnace, welding, traction, etc.	These are installed in the engine to enable stepping down of voltage from overhead lines.
EMCO	✓	✓	✓	✓	✓
BBL	✓	✓	✓	✓	✓
VTL	✓	✓	✓	-	-
ITTL	✓	✓	-	✓	✓

Source: India Infoline Research

Power transformers account for 65-68% of total value of the industry

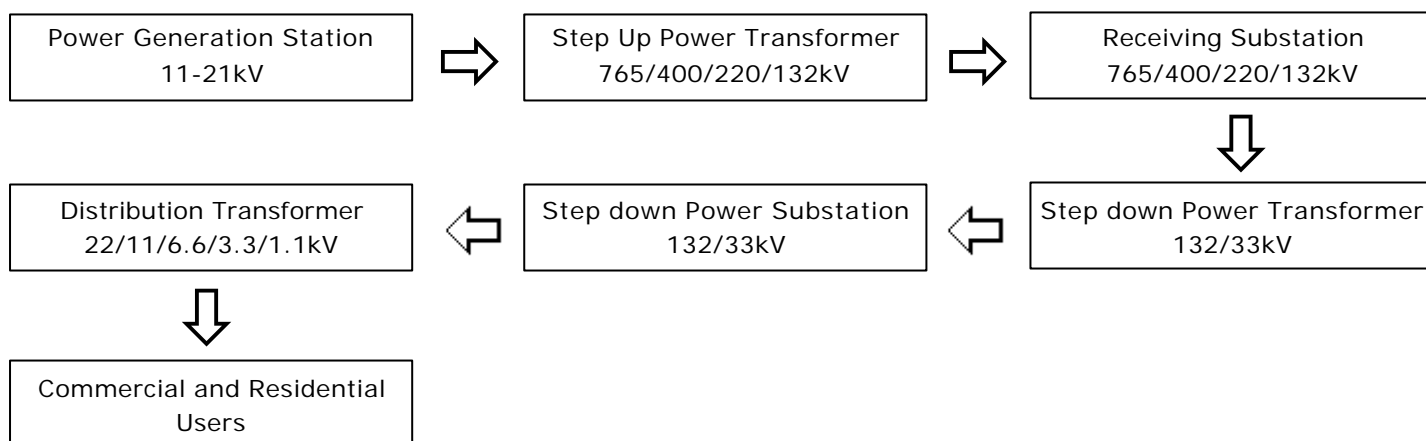
Distribution transformers account for the remaining 32-35%

A power transformer is installed at the generation site right up to the last substation just before distribution activities commence. This transformer is used to either step up or step down power to match the voltage requirements. They are oil filled transformers with its range spanning from 11kV – 765kV. Power transformers would account for about 65-68% of the total value of the transformer industry.

A distribution transformer is used to transfer power from a substation to the final point of consumption. The basic purpose of a distribution transformer is to provide end users with low voltage power. A distribution transformer could either be oil filled or dry type by nature, with range spanning from 1.1 – 11kV. Distribution transformers would account for the remaining 32-35% of the total value of the transformer industry.

A dry type transformer is used where there is space constraint and higher chances occurrences of fire. These are mostly used by industrial and corporate clients at software parks, hotels, hospitals, high rise buildings, etc. These transformers are categorized as distribution transformers due to their nature of operation, i.e. at end users locations.

### Transformers at various junctions



Source: India Infoline Research

In India many players belong to the unorganized segment of the industry and cater to the smaller ratings distribution transformer demand. This is due to lack of infrastructure, testing facilities and technical skill sets available with them. However over a period of time many of these smaller players moved up the value chain and graduated to the higher rating transformers. Despite this the number of players qualified for the larger variants of transformers is still small to serve upcoming demand expected over the forthcoming years.

### Transmission network

Voltage class (kV)	Application	Type of transformer required
765 / 400 / 220	Interstate transmission	Step down
220 / 132 / 66 / 33	Sub transmission	Step up and step down transformers
33 / 22 / 11	Primary transmission	Step up and step down transformers

Source: Industry, India Infoline Research

The Indian transmission sector consists of three levels: interstate transmission, sub transmission and primary transmission. These three segments are classified based on their voltage class; interstate transmission level ranges from 220 – 765kV, sub transmission level ranges from 33 – 220kV and below 33kV represents primary transmission.

### Historical production statistics

(MVA)	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	2006
REC Dist. Transformers	4,620	3,962	3,447	4,661	5,258	3,779	4,010	4,386	8,252	7,561
Non REC Dist. Transformers	10,010	10,950	11,759	11,982	11,437	10,756	12,487	15,476	17,943	20,753
Power Transformers	30,983	35,170	33,505	26,132	28,574	35,675	41,439	50,276	55,014	61,760
Total	45,613	50,082	48,711	42,775	45,269	50,210	57,936	70,138	81,209	90,074
(% of total)	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	2006
REC Dist. Transformers	10.1	7.9	7.1	10.9	11.6	7.5	6.9	6.3	10.2	8.4
Non REC Dist. Transformers	21.9	21.9	24.1	28.0	25.3	21.4	21.6	22.1	22.1	23.0
Power Transformers	67.9	70.2	68.8	61.1	63.1	71.1	71.5	71.7	67.7	68.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Indian Electrical and Electronics Manufacturers' Association  
REC: Rural Electrification Corporation

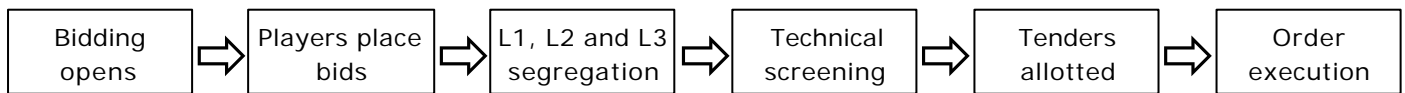
SEBs form major chunk of transformer demand

SEBs act as nodal points for execution of government projects as they are authorized to float tenders and allot contracts depending on the bidders compliance with various parameters. SEBs in the past accounted for 75-80% of the total transformer demand, followed by industrial (15%) and export demand (5-10%). Private segment demand has been from various power consuming industries viz steel, aluminium, cement, oil and gas, automobiles, engineering, mining and minerals, paper pulp, chemical and petrochemicals etc.

Most of the transformer manufacturers cater to demand from SEBs, which forms about 70-75% of their revenues and balance is contributed from the industrial side. However, the case is reverse for Voltamp, which derives 95% of its revenues from industrial segment and the balance 5% from SEBs.

Orders from SEBs are all tender based and the lowest bidder(s) (L1 only or L1, L2 and L3 bidders) bags it. Many SEBs had price preference clause in place for companies present in their region. However, now with the scenario becoming more competitive and many players entering the industry, SEBs are forced to be more price sensitive. Hence they are subscribing to competitive bidding route. Most of the projects are funded either by WB or ADB or JBIC. These tenders have an inbuilt price variation clause (PVC), which protects the bidders margins from vagaries in raw material costs. In the event of declining raw material prices, purchasing party will stand to benefit as price of finished product will move in line with that of raw material prices. Bidders price their products as per the IEEMA price index, which is widely accepted by the industry. The IEEMA index has been successful in capturing any variation in prices of key raw materials.

**Tendering process**



Source: India Infoline Research

Bidding process takes about eight months

The bidding process takes about 8 months. First the bids are placed in the newspaper or website. Interested parties who are prequalified will place their quotations along with the required technical specifications. This process takes about four months. After the bids are placed L1, L2 and L3 bidders are segregated from the lot. They undergo technical screening in order to check their compliance with the technical specifications. The tender will be awarded to the company who is the lowest bidder and also scores high on technical grounds. This process takes another four months.

Order execution would depend on the type of order placed, i.e. power or distribution transformer. Usually the delivery period of distribution transformers is 1.5 - 2 months, medium sized transformer is 2 -3 months and power transformer would be 6 - 8 months.

**IEEMA price index capturing the input cost variations – the calculation**

IEEMA price index successfully captures any variation in raw material prices

The pricing of a transformer is based as per the IEEMA price index, which is released on a monthly basis. The index captures price movements of all vital raw materials viz copper, CRGO, transformer oil, insulation material, steel and also labour. The index assigns weights to key inputs based on which, it is revised monthly. This is widely accepted by the industry players, thereby insulating both parties from vagaries in input costs.



IEEMA has different formulas for pricing the transformers, aluminum wound (oil filled) or copper wound distribution transformers up to 10MVA, 33kv rating (oil filled and dry type) and copper wound power transformers above 10MVA, 33kv (oil filled). Three formulas based on which prices are determined for the kind of transformer are attached in the annexure.

**Pricing for aluminum or copper wound transformers as on the date of tendering:**

Price of transformer oil based stock should be as on the 1<sup>st</sup> working day, two months prior to the date of tendering. Price of aluminum or copper, CRGO steel sheets and insulating material should be as on 1<sup>st</sup> working day, one month prior to the date of tendering. However, wholesale price index number for iron and steel should be week ending 1<sup>st</sup> Saturday of three months prior to the date of tendering and all India average consumer price index no should be for three months prior to the date of tendering.

**Industry SWOT**

<p style="text-align: center;"><b>Strength</b></p> <ul style="list-style-type: none"> <li>√ Cost competitiveness</li> <li>√ Skilled workforce</li> <li>√ Technical tie up with global players</li> <li>√ Possess capabilities to manufacture higher rating transformers</li> <li>√ Easy access to copper, which is about 20-25% of net sales</li> <li>√ Domestic players prequalified with SEBs</li> </ul>	<p style="text-align: center;"><b>Weakness</b></p> <ul style="list-style-type: none"> <li>√ Dependent on imports of CRGO which is about 25-30% of net sales</li> <li>√ High dependence on government programs to fuel growth</li> <li>√ Highly working capital intensive</li> <li>√ High debtor days in government projects</li> </ul>
<p style="text-align: center;"><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>√ Large and growing domestic demand</li> <li>√ Various government programs being undertaken for additional generation capacities</li> <li>√ Huge capex announced by various industries</li> <li>√ Replacement market to supplement demand from fresh installations</li> <li>√ 800kV transformers – new product to the portfolio</li> </ul>	<p style="text-align: center;"><b>Threats</b></p> <ul style="list-style-type: none"> <li>√ Imports of cheaper variants from China</li> <li>√ Rising raw material prices – CRGO and Copper</li> <li>√ Slowdown in government programs and industrial capex</li> <li>√ Change in technology</li> <li>√ Low capital required to set up a facility which could induce foreign players to enter the market</li> </ul>

Source: India Infoline Research

Organized segment represents 75% of the industry in value terms and 80% in volume terms

**Players from the domestic and international arena**

Organized segment players represent 75% of the industry in value terms and about 80% in volume terms. In the organized segment there are a handful of them viz Crompton Greaves, ABB, BHEL, Areva T&D, EMCO, Bharat Bijlee, ITTL, Voltamp, and Vijai Electricals. Some of the larger players from China could venture into India to take advantage of this high demand. At present the Chinese players are catering to their internal demand, which is likely to be exhausted by end of 2009-10. Post this we expect Chinese imports into the country to capitalize on the growth opportunity here. Apart from them there are other players viz FKI Group, GE, Hitachi and Toshiba, who have their presence in this space.

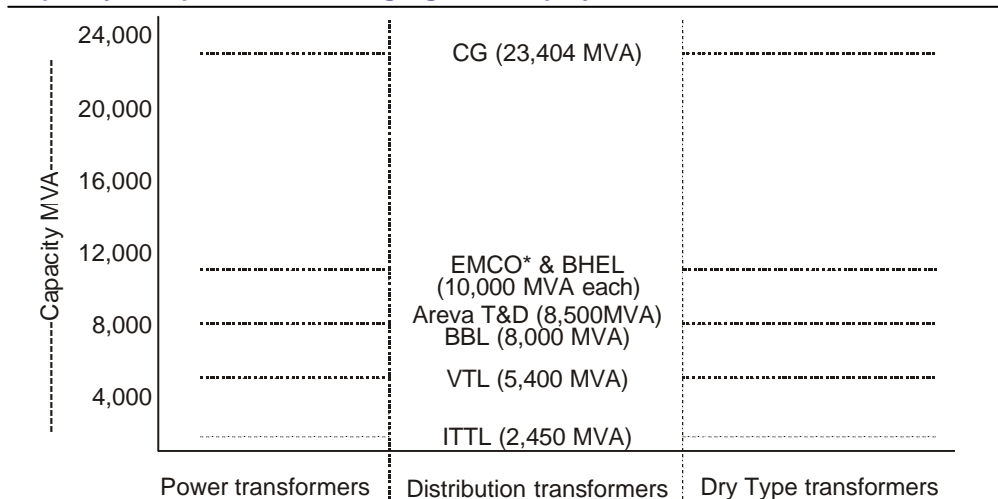
**Capacity and utilisation of players during FY06**

Players	Product range	Capacity (MVA) FY06	Capacity Utilization (%) FY06
ABB*	525kV - 800kV	10,000	55.6
Crompton Greaves**	up to 500kV	23,404	64.0
Areva T&D*	up to 400kV	8,500	64.6
BHEL	up to 400kV	12,000	88.9
EMCO	up to 400kV	10,000	74.4
BBL	up to 220kV	8,000	50.2
ITTL	up to 132kV	2,450	75.2
VTL	up to 132kV	5,400	83.4
Vijai Electricals	up to 400kV	12,500	NA
Total capacity of organized segment		92,254	68.3#

Source: Capitaline, Industry  
 \* Data for CY05  
 \*\* Includes capacity for reactors  
 # Utilization after negating Vijai Electricals capacity

In the above table it is seen that industry capacity utilization is low at 68.3%. We need to make note that EMCO and BBL have expanded capacity towards the end of FY06 therefore utilization seems low. However, the product mix will affect utilization levels as power transformers take more time compared to distribution transformers.

**Capacity and product wise segregation of players**



Source: India Infoline Research  
 \* EMCO does not manufacture dry type transformers  
 CG: Crompton Greaves, BHEL: Bharat Heavy Electricals Ltd, BBL: Bharat Bijlee Ltd, VTL: Voltamp Transformers Ltd, ITTL: Indo Tech Transformers Ltd

Apart from the names mentioned there are many players who are present in the industry and cater to the smaller transformer segments. With huge demand expected over the next five years and good operating margins (in the range of 14-19%) being a distinguishing characteristic of the industry there are chances of foreign players entering the Indian market in future. This invasion could be from Chinese players who will have surplus capacity post 2009 when their power reforms will be done with.

**Product range of universe companies**

Product range	EMCO	ITTL	VTL	BBL
Power Transformer	Up to 315 MVA, up to 400kV	Up to 200 MVA, 66/110/132/220 kV setting new facility for 400 kV	Above 5,000KVA, 33kV to 50,000KVA, 132 kV	Up to 160MVA, up to 220kV
Distribution Transformer	Up to 16 MVA, up to 66kV	Up to 3.15MVA, 11/22/33 kV	500KVA, 11kV to 5,000KVA, 33kV	500KVA - 5000KVA/33kV
Dry Type Transformer	NA	100 KVA – 2,500 KVA / 22 kV	63KVA (Dry Type) to 7500KVA (CRT)	NA
Generator transformer	NA	NA	NA	NA
Motor starting transformers	NA	NA	NA	NA
Thyristor duty transformers	NA	NA	NA	NA
Locomotive transformers	Up to 7.5 MVA single phase and three phase, 25kV	230 kV	NA	NA
Furnace Transformers	Up to 150 MVA, up to 33kV	33 kV	NA	NA
Rectifier Transformers	Up to 160 KA DC, up to 33kV	NA	NA	NA
Traction Transformers	Up to 50 MVA single phase, up to 220kV class	NA	NA	NA
Small Distribution Transformers	10KVA up to 500 KVA, up to 33kV	NA	NA	NA
Wind mill applications	NA	11/22/33 kV	NA	NA
Induction Furnace	NA	11/22/33 kV	NA	NA
Unitized Sub station	NA	33 kV	NA	NA

Source: Companies, India Infoline Research  
NA: Not available

Many domestic players are expanding capacity to cater to upcoming demand

**Capex planned by universe companies**

Out of the universe companies EMCO and ITTL have announced aggressive capacity addition plans. EMCO expanded its transformer capacity from 8,500MVA in FY05 to 10,000MVA in FY06. The management is in the process of doubling this to 20,000MVA by end of FY07. ITTL, which was listed last year, will deploy funds to triple capacity from 2,450MVA in FY06 to about 7,450MVA by FY08. It commenced operations at its new distribution transformer facility during the quarter and its dry type facility will commission by end of Q4FY07 or beginning FY08. With the commencement of the dry type facility ITTL will make an entry into the high value segment. VTL also during the year commenced operations of its third shift thereby taking the annual capacity to 7,400MVA. We expect the company to announce addition of fresh capacity sometime soon, in order to capture robust industrial demand.

India's region wise installed base

Region (MVA)	Step Up	Step Down	Distribution Transformer	Total	Contribution (%)
Northern	39,984	133,643	66,172	239,799	31.6
Western	37,597	132,765	65,028	235,390	31.0
Southern	24,848	100,889	55,079	180,816	23.8
Eastern	24,931	50,896	17,255	93,082	12.3
North-Eastern	3,074	3,945	3,134	10,153	1.3
<b>Total</b>	<b>130,434</b>	<b>422,138</b>	<b>206,668</b>	<b>759,240</b>	

Source: Center for Monitoring Indian Economy, May 2005 Energy

Transformer manufacturing process

The following are the major activities involved in manufacturing a transformer:

- ö **Design:** Since all transformers are customized by nature, the designs are submitted for approval before commencing operations.
- ö **Core assembly:** The core is made up of cold rolled grain oriented steel (CRGO) also known as lamination. These laminations are cut as per design or bought pre cut as per size. These sheets are of 0.23 to 0.35mm in thickness and are built by stacking these sheets one above the other. Once stacked it is tightened with the frame with the help of a tie rod and core bolts. The entire core assembly is lifted and kept vertically for assembling the coils.
- ö **Winding:** These are made up of Electrolytic grade copper strips/copper wires/enamel copper/copper foils with inter layer of insulations made of paper/fiber glass depending on the type of transformer and design. They are wound on wooden/steel formers and are generally of circular shape with dimensions maintained as per design. Once completed windings are kept in drying oven and are heated at set temperature to achieve the desired height. In the drying oven moisture from the insulation material is removed shrinking the coils to the designed height.

  - o In case of resin impregnated dry type transformers, windings are kept in impregnation chamber for resin impregnation. On completion of the cycle they are put in the oven.
  - o In case of cast resin dry type transformers, windings are kept in casting chamber for resin casting. On completion of the casting process, windings are kept in the oven for curing.
- ö **Transformer assembly:** The yoke of the transformer core will be removed and the coils are assembled concentrically on this core with insulation at the bottom, top and in between the coils. The insulation structure will depend on the voltage class of the transformer and generally consisting of oil/press board insulation. These two insulations form a mixed di-electric, which gives it capacity to withstand higher voltage.
- ö **Connection:** The core coil once assembled is kept in drying oven for shrinking of insulation. Connections are made with the help of copper bus bar and jumpers as per the design. The connections are provided on the transformer windings to take care of the voltage fluctuations to get the

output constant/designed voltage. Tapings from windings are connected to offload/onload tap changers. After completion of connections various electrical tests are conducted to ensure that results are as per design

**Ö Drying:** The core and coil assembly are then kept in air drying/vacuum oven as per the rating of transformer for a predefined time. The core and coil assembly are constantly kept at elevated temperatures so that all moisture absorbed by them is dried.

**Ö Tanking:** Tanks are fabricated as per design. The tanks are then painted with oil resistant paint for inside and as per customer requirement from outside. The dried core and coil are then taken out of the oven and placed in the tank. All connections with bushings etc. are made and cover is tightened. Transformer oil is filled in the tank through filter machine under vacuum. After the oil filling is completed, the transformer is kept for 24 hours for oil leakage test. This process of oil filling is not applicable for dry type transformers.

**Ö Completion of transformer:** Transformer is then tested electrically as per the relevant standard. After the completion of testing, the transformer is given the final touch up paint and then it is ready for dispatch.

The time taken to manufacture a transformer would vary depending on its type. A distribution transformer usually would take about 1.5-2 months, a medium power transformer would take anywhere between 2-3 months and a large power transformer would take about 6-8 months. This would depend on the rating of the transformer.

#### Cost break up

Profitability in the transformer industry is a function of two critical factors viz; design of the transformer with optimum utilization of raw materials, cost of which has skyrocketed in the recent past, and efficient working capital management. Raw materials constitute anywhere between 65-75% of net sales with major costs being that of copper, CRGO, transformer oil and steel. In the past one-year prices of copper and CRGO, the key inputs have run up significantly. Since the major clients are SEBs, payments cycles are long resulting in higher working capital requirement.

#### Average cost involved in manufacturing a 10MVA / 132kV transformer

	(% of net sale)	Quantity	Average Cost (per ton / litre)
Copper (MT)	20-25	3.5	~US\$7,100
CRGO (MT)	25-27	8.7	~US\$4,500
Transformer Oil (KL)	4-5	11.0	Rs35,000-40,000
Steel (including radiators and enclosure) (MT)	15-18	8.5	US\$525-550
<b>Total</b>	<b>65-75</b>		

Source: Industry, India Infoline Research

All quantities in Metric Tons except transformer oil which is in Kilo Litres  
All costs per ton except transformer oil which is per litre

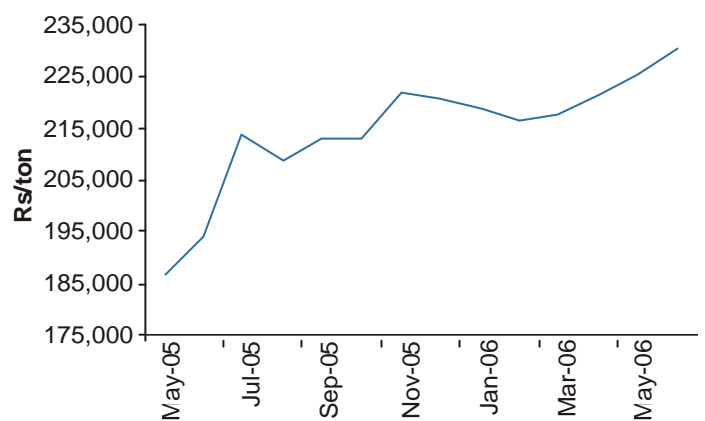
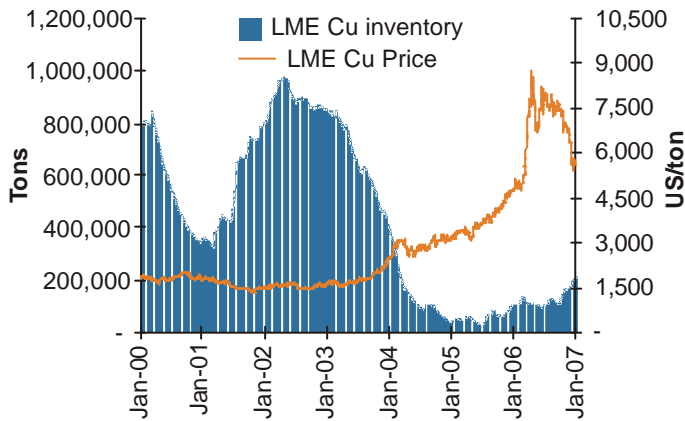
Copper, CRGO, steel and transformer oil form major cost components

The windings of a transformer are of copper. This is electrolytic grade copper strips/wires/enamel copper/copper foil. Copper prices, which are LME linked, have in the recent past registered a jump of 76.2% since FY06 to date. Copper is procured from domestic players like Sterlite Industries, Hindustan Copper, Birla Copper etc.

CRGO, an equally expensive and critical ingredient, needs to be imported from USA, Europe or Asia. There are no manufacturers of CRGO in India due to low demand and high cost involved in manufacturing it. Globally there are a handful of them who manufacture this material with the prominent ones being Thyssen, Nippon, Corus, Kawasaki Steel Corp. and a few of the European and American players. Some of the Indian players have evinced interest in setting up a facility here to bridge the demand supply gap and take benefit of high prices of the commodity.

LME Copper price

CRGO price

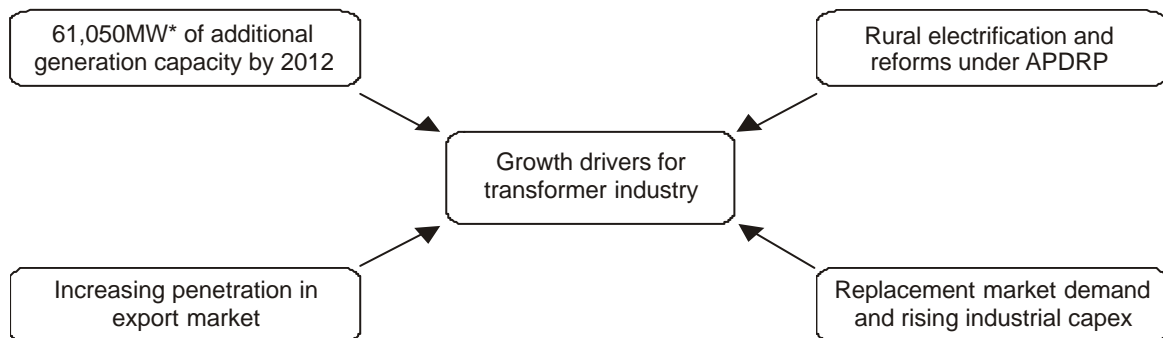


Source: Bloomberg, Indian Electrical and Electronics Manufacturers' Association

As per Indian Transformer Manufacturing Association (ITMA), annual global demand for CRGO stands at about 1.7mn tons. China accounts for 45% of the global demand for the commodity. The global demand supply gap stands at about 0.2mn tons.

Apar Industries Ltd and Savita Chemicals Ltd. are the largest suppliers of transformer oil in the country. Transformer oil forms about 4-5% of net sales in the cost of production. The other major cost is that of steel which is used for making of tanks. This is either sourced directly from third parties or steel is procured separately and then sent for fabrication to third party.

Growth matrix



Source: India Infoline Research

\*Taking achievement rate of 60%

APDRP: Accelerated Power Development and Reforms Program

68,000MW of additional generating capacity is being planned over the XIth Five Year Plan

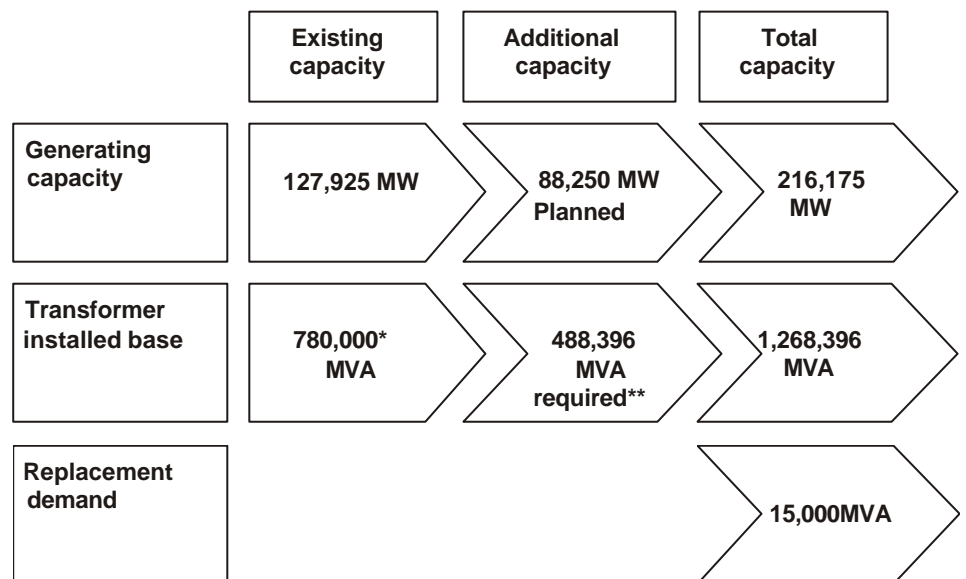
**Customer wise market segmentation**

Majority of the demand that is expected to come over the next five years will be driven by investments by the government for enhancing the generation capacity and spreading its reach by distributing power to the remote villages.

**Capex in generation creates demand for 97,679MVA annually**

The transformer industry will gain from capex cycle in both the public and the private sector. The government has set itself a mission “Power for all by 2012” under which it intends to increase the total generation capacity to just over 200,000MW from 127,925MW at present over X<sup>th</sup> and XI<sup>th</sup> Five Year Plans. This means an addition of about 102,024MW over the two plan periods. Till date it has added 13,774MW leaving 88,250MW of fresh capacity addition over the next five years. Historically we have seen that the government has managed to achieve about 60% of its original targets in additional generation capacity. Even if we assume the same achievement rate going forward, 61,050MW should be added over the next five years.

**Expected transformer demand from government capex**



Source: India Infoline Research  
 \*As per Indo Tech Transformers Ltd \*\*At 60% achievement rate and 8MVA/MW

As a thumb rule for every additional megawatt of generating capacity there will be a requirement of 7MVA of transformer capacity. However, we believe that this ratio will change to 8MVA per megawatt, with thrust now being on distribution of power to the remotest villages. This is further supported by the strategy of reducing the number of dependents per transformer in order to enhance efficiency and life of the product. This translates into fresh demand of 488,396MVA transformer capacity (as per our calculation of 60% achievement and 8MVA/MW) over the next five years.

This should result into demand for 488,396MVA transformers over the next five years

UMPPs to also fuel demand for transformers

### Expected demand for transformers

As on January 1st, 2007	As per plan	@ 60% achievement
Total installed capacity (MW)	127,925	127,925
Capacity addition during X <sup>th</sup> plan (MW)	34,024	34,024
Capacity addition during XI <sup>th</sup> plan (MW)	68,000	40,800
Total planned additional capacity (MW)	102,024	74,824
Commissioned during X <sup>th</sup> plan (MW)	13,774	13,774
Fresh addition (MW)	88,250	61,050
Total transformer demand (MVA)	617,747 *	488,396 **
Annual transformer demand for next five years (MVA)	123,549	97,679
Total installed base in India post additions (MVA)	1,397,747	1,268,396
<b>Total annual demand from all areas (MVA)</b>	<b>148,549</b>	<b>122,679</b>

Source: Ministry of Power, India Infoline Research

MW=Mega Watt, MVA=Mega Volt Ampere

\*At 7MVA/MW \*\*At 8MVA/MW

### Development of Ultra Mega Power Projects (UMPP)

The government along with the CEA and PFC are working on the blue print for developing the UMPP each with a capacity of 4,000 MW. All these projects will be allotted on the tariff based competitive bidding route.

In the first phase, two projects at pithead and three at coastal locations have been identified. Government approval on the five projects has already been received for: Sasan Power Ltd (M.P.), Akaltara Power Ltd (C.G.), Coastal Gujarat Power Ltd, Coastal Karnataka Power Ltd and Maharashtra Ultra Power Project Co.

### Ultra mega power projects

Project	Location	Allocation	MW	Rs bn
Coastal Maharashtra Ultra Power Project Co	Maharashtra	Rajasthan, MP, Chattisgarh, Maharashtra and Karnataka	4,000	150
Coastal Karnataka Power Ltd	Karnataka	Rajasthan, TN, Kerala, Maharashtra, Karnataka	4,000	150
Coastal Gujarat Power Ltd	Gujarat	UP, Punjab, Rajasthan, Haryana, Gujarat and Maharashtra	4,000	150
Sasan Power Ltd	MP	UP, Uttaranchal, Delhi, Punjab, Rajasthan, Haryana, MP, Chattisgarh	4,000	150

Source: Cris Infac

Apart from these projects there are another two new projects, one each in Orissa and Andhra Pradesh. This takes the total investment in the projects to about Rs1.1tn. Recently the Tamil Nadu government announced setting up 4,000MW power plant in the state.



**Projected electricity requirement by Ministry of Power**

Year	Electricity requirement (Bn kWh)		Installed Capacity (GW)	
	8%	9%	8%	9%
<b>GDP growth rates</b>				
2006-07	700	700	140	140
2011-12	1029	1077	206	215
2016-17	1511	1657	303	331
2021-22	2221	2550	445	510
2026-27	3263	3923	655	785
2031-32	4793	6036	962	1207

Source: Planning commission  
BnKWh: Billion Kilo Watt Hours, GW: Giga Watt

The government is currently working on strengthening the transmission lines and creating the National Grid. Through this it will interconnect the five regions; North, South, East, West and North Eastern, thereby enhancing the transfer capacity to about 37,150MW from the current 9,000MW. This is scheduled to complete by 2012 through creation of "Transmission Super Highways". Since these lines will transmit power from generation point to the final consumer, demand for 765/400kV step down power transformers and distribution transformers will be high. Our universe companies i.e. EMCO, ITTL, VTL, BBL in addition to ABB, Crompton Greaves, Areva T&D and BHEL will stand to benefit. ITTL is in the process of setting up a new power plant, which will be equipped to manufacture the 400kV rating power transformers.

**Demand stemming from rural electrification program**

Under the rural electrification program the center aims at providing all households with electricity by 2012. As per the program it aims at setting up of electricity distribution infrastructure viz Rural Electricity Distribution Backbone with at least 33/11kV sub station, Village Electrification Infrastructure with at least one distribution transformer in a village and standalone grids with generation unit where grid supply is a problem. Rural Electrification Corporation is the nodal agency for the implementation of the scheme.

During the X<sup>th</sup> Five Year Plan assistance to the state government was upped by Rs400bn, of which Rs200bn will be for strengthening and upgradation of sub transmission and distribution network under the investment component. The remaining Rs200bn is a grant to the states for the reduction in the cash loss by SEBs/Utilities under the incentive component. With improving health of SEBs we can expect shorter payment cycles to companies in this space. This could lead to declining debtor days for the companies catering to demand from the SEBs.

**Demand from industrial and exports to also contribute**

With the growing demand for energy in the country, investment in the oil and gas sector is a must. Rising demand for petroleum products led to many Indian refineries announcing capacity addition plans. About 74.5mn metric tons per annum (MMTPA) capacity is being planned in the coming years with investments totaling to Rs785bn.

Rural electrification program of the government to boost demand for distribution transformers

Industrial capex of Rs8.8tn to act as booster for Voltamp

Every million ton of cement capacity requires 14MW of power, 70mn tons of additional capacity expected to come up

IT/ITES and organized retailing sector to up demand of dry type transformers

Investments in the cement sector will increase the manufacturing capacity in the country by 70mn tons. As a thumb rule for every million ton of cement capacity we would require about 14MW of power. About 90% of these facilities are expected to have captive power plants in order to reduce costs. This results into transformer demand of about 6,395MVA. In addition demand will also stem from existing cement facilities who are exploring the idea of a captive power plant. Demand from this side is expected to be another 280MVA, taking the total demand from the sector to 6,675MVA over the next couple of years.

### Industrial capex announced, proposed and under implementation

Total Investment (Rsbn)	Announced	Proposed	Under implementation	Total
Metal	3,020	836	544	4,400
Oil	472	529	749	1,751
Cement	120	38	36	194
Others	1,290	698	544	2,532
<b>Total</b>	<b>4,902</b>	<b>2,101</b>	<b>1,873</b>	<b>8,876</b>

Source: Industry

Coupled with this, huge demand is also expected from robust activities taking place in real estate development. Commercial real estate demand is expected to be about 350mn sq ft out of which IT/ITES and organized retailing sector should contribute about 300mn sq ft. This along with a mad rush for SEZs should fuel growth for medium range transformers. The dry type transformers, which are designed to cater to demands of this segment, should be amongst the largest beneficiaries.

Investments are also being made in the metals space, both ferrous and non-ferrous. Hindalco, NALCO and the Vedanta group are all undergoing expansion plans. Hindalco has planned 887MW power plants during these expansions. With power being a major cost constituent in metal manufacturing all expansions announced will have a captive power plant. This segment will also boost demand for transformers.

Exports form a negligible portion of Indian transformers industry is also witnessing a gradual growth. This is an untapped area, which companies plan to venture into. Further many MNCs like ABB, Areva, Siemens etc already have their base set here are looking forward to make their Indian base the exporting hub for transformers. Many Middle Eastern and African countries are also undergoing power reforms just like India; this brings opportunity for many medium and large sized players to participate in international contracts.

### Replacement market a bonus

Demand from the replacement market also adds to a promising future for the industry. The average life of a transformer is 25-30 years, which means that transformers installed during the IV<sup>th</sup> – VII<sup>th</sup> plan would now be replaced.

### Expected replacement demand

Plan	Period	Capacity (at the end of the period in MVA)			Capacity additions in MVA		
		Power	Distribution	Total	Power	Distribution	Total
IV	1970-75	75,734	25,884	101,618	NA	NA	NA
V	1975-80	124,275	39,601	163,876	48,541	13,177	61,718
VI	1980-85	191,371	60,506	251,877	67,096	21,445	88,541
VII	1985-90	272,527	83,451	355,978	81,156	22,945	104,101

Source: Center for Monitoring Indian Economy, May 2005, Industry

*Cheap and skilled labour coupled with access to raw materials and technology, a big positive for India*

At the end of the IV<sup>th</sup> Five Year Plan power transformers constituted about 74.5% while the remaining 25.5% was distribution transformers, while during the VI<sup>th</sup> this changed to 76% and 24% respectively. This ratio in favor of power transformers indicates of expected demand for the same in the near future.

### **India advantage**

Indian manufacturers have an advantage over its global peers as we have access to cheaper skilled labour. The skilled labour enables reduction in cost through its designs, which helps them to make efficient use of copper, CRGO and oil. To add to this Indians have access to key raw materials, which forms about 65-75% of the total cost which helps them to further reduce costs. Designing helps companies in making savings of up to 4% of total costs. Technology is yet another important differentiating factor. Technology is imported either from Germany, Britain or USA, depending upon the tie-ups of each of the players in the past or present.

### **We expect our universe companies to register 46% bottomline growth**

ITTL will benefit from capacity expansion, which will contribute to its topline from mid FY08. It also has been successful in capitalizing on its locational advantage, which in turn leads to best margins in the industry. We expect the company to register a 53.3% CAGR bottomline growth over FY06-09E, translating into an EPS of Rs24.1 and Rs37.5 for FY08E and FY09E respectively. We recommend a BUY on the company with a price target of Rs375, an upside of 25.2%.

We believe EMCO, which has the best order book/sales ratio of 2.5x and is well diversified into project execution and meter manufacturing, will benefit from the government initiatives in the sector. It is diversifying into power generation, which will further derisk its business. We expect the company to register a 68.4% CAGR bottomline growth over FY06-09E, translating into an EPS of Rs62.8 and Rs88.9 for FY08E and FY09E respectively. We recommend a BUY with a price target of Rs1,067, an upside of 21.2%.

VTL derives 95% of revenues from industrial clients where it has a strong foothold. It leverages its position to sell high margin dry type transformers to these clients. Coupled with this the company is also prequalified with the SEBs thereby providing it a cushion during rough times. We expect the company to register a 44.1% CAGR bottomline growth over FY06-09E, translating into an EPS of Rs51.5 and Rs68 for FY08E and FY09E respectively. With a sharp run up in the stock price in the recent past, we recommend a HOLD with a price target of Rs816, an upside of 16%.

Bharat Bijlee, recently expanded capacity to take advantage of the demand from the government and industrial capex. BBL has some non-strategic investments which equates to Rs182 per share provides some cushioning to the stock. We expect the company to register a 27.8% CAGR bottomline growth over FY06-09E, translating into an EPS of Rs94.7 and Rs124.4 for FY08E and FY09E respectively. With a run up in the stock price in the recent past, we recommend a HOLD with a price target of Rs1,675, an upside of 12.8%.

**Universe companies**

		<b>ITTL</b>	<b>EMCO</b>	<b>VTL</b>	<b>BBL</b>
Net Sales (Rs mn)	FY06	927	4,054	2,488	3,008
	FY07P	1,421	6,313	3,872	4,193
	FY08P	1,872	9,159	5,614	5,344
	FY09P	2,941	12,693	7,298	6,854
OPM (%)	FY06	18.7	12.8	13.6	17.0
	FY07P	21.5	13.5	14.0	16.5
	FY08P	21.0	13.5	14.1	16.5
	FY09P	20.7	13.5	14.2	16.5
APAT (Rs mn)	FY06	111	191	230	337
	FY07P	208	421	369	425
	FY08P	256	643	522	535
	FY09P	399	910	688	703
NPM (%)	FY06	11.9	4.7	9.2	11.2
	FY07P	14.7	6.7	9.5	10.1
	FY08P	13.7	7.0	9.3	10.0
	FY09P	13.6	7.2	9.4	10.3
EPS (Rs)	FY06	10.4	25.0	22.7	59.6
	FY07P	19.6	41.1	36.4	75.1
	FY08P	24.1	62.8	51.5	94.7
	FY09P	37.5	88.9	68.0	124.4
EV/EBIDTA (x)	FY06	15.1	14.8	19.1	14.1
	FY07P	9.1	10.7	11.8	10.8
	FY08P	7.4	8.2	8.5	8.7
	FY09P	4.5	6.6	6.5	7.7
ROCE (%)	FY06	24.6	21.6	43.0	45.8
	FY07P	33.8	17.8	50.0	43.1
	FY08P	32.2	23.0	47.8	41.0
	FY09P	38.0	26.5	45.1	42.0
RONW (%)	FY06	15.5	14.2	33.1	43.6
	FY07P	22.6	13.1	35.0	38.6
	FY08P	21.7	18.0	33.5	35.1
	FY09P	25.3	21.8	30.9	33.5
P/E (x)	FY06	28.8	35.3	30.9	24.9
	FY07P	15.3	21.4	19.3	19.8
	FY08P	12.4	14.0	13.6	15.7
	FY09P	8.0	9.9	10.3	11.9
<b>Recommendation</b>		<b>BUY</b>	<b>BUY</b>	<b>HOLD</b>	<b>HOLD</b>
<b>Target Multiple (x)</b>		<b>10.0</b>	<b>12.0</b>	<b>12.0</b>	<b>12.0</b>
<b>Target Price (Rs)</b>		<b>375</b>	<b>1,067</b>	<b>816</b>	<b>1,675</b>
<b>Upside (%)*</b>		<b>25.2</b>	<b>21.2</b>	<b>16.0</b>	<b>12.8</b>

Source: India Infoline Research

\* Calculated on prices as on 5th February, 2007

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#### Industry risks and concerns

- √ **Dependence on investments by government:** The growth in demand of transformers is dependent on the pace of investments by the government and industries over the next couple of years. A delay in implementation of the projects announced could slow down growth going forward.
- √ **Keeping pace with technology:** Manufacturing of transformer involves some technology, which is the differentiating factor for many players in the industry. If they are unable to maintain and upgrade their technical know how, it may adversely affect their revenues.
- √ **Access to key raw materials:** The industry is subject to volatility in key raw material prices, i.e. copper, CRGO, transformer oil and steel, as they are about 65-75% of net sales. All players catering to SEB demand have an escalation clause in place thereby maintaining their margins. However it could prove hazardous for players servicing more of industrial clients.
- √ **Threat from imports and other smaller players:** There are many players in the industry both in domestic and international market. With the entry of international players in the market and desire of smaller players to graduate to larger ratings could possibly lead to price competition.
- √ **Fixed price contracts for industrial clients:** Contracts from the industrial segment are fixed price hence companies catering to this segment would have to enter into such contracts, depriving them of any escalation in prices that it would enjoy in SEB contracts.
- √ **Highly working capital intensive:** The industry is highly working capital intensive, as a transformer takes about three to six months depending upon the size.
- √ **Poor track record of SEBs:** SEBs were financially unstable over the past couple of years. However now with the financial backing coming from the World Bank and Asian Development Bank the scenario has become a lot clearer in terms of payments for the companies.

# Indo Tech Transformers Ltd

## Stock Data

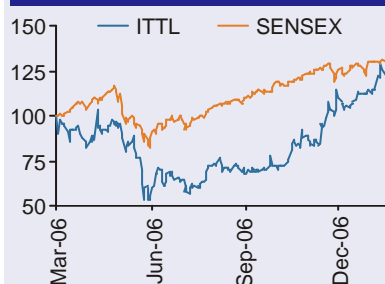
Target Price	Rs375
Upside	25.2%
Sensex	14,516
52 Week H/L	Rs315 / 118
Avg Volumes (6m)	86,307
Market Cap	Rs3.2bn
Face Value	Rs10
BSE Code	532717
NSE Code	INDOTECH

(Price as on 5th Feb' 07)

## Share Holding Pattern

Dec '06	(%)
Promoters	60.3
Non Promoter Corp Holding	6.1
Institutions	9.5
Foreign	8.9
Public & Others	15.3

## Share Price Trend



## Revenues expected to grow at 46.9% CAGR over FY06-09E

Indo Tech Transformers Ltd (ITTL) is in the process of more than doubling its capacity from 2,450MVA to 7,450MVA. It is relocating its Saidapet facility to Thirumazhisai with an enhanced capacity of 750MVA and also setting up a new 4,000MVA power transformer facility. This expansion will enable it to undertake orders of higher ratings too. Its current order book of Rs1.5bn, 1.7x FY06 revenues, is to be executed over the next 9-12 months.

## Diversifying with newer product range

ITTL is setting up a new dry type transformer facility at Thirumazhisai and a power transformer unit with a capacity to manufacture 400kV transformers. This will mark its foray into the higher ratings segment where margins are better. ITTL signed a MoU with DUPONT for technical, marketing, analytical and business assistance for its new dry type transformers. Dry type transformers have better realizations and higher margins as compared to conventional oil filled transformers.

## Expanding its reach

ITTL is a dominant player in South India with a strong foothold in the SEB's in Tamil Nadu, Andhra Pradesh, Karnataka and Kerala. It also sells its products to the corporates in the region. It is focusing on expanding its reach from South India to pan India and has appointed distribution agents for the same. Coupled with this it also intends to tap export market.

## Valuation

ITTL is setting ground for its growth and also to overcome delivery constraints faced by it earlier. We expect the company to benefit from the ongoing investments in the power generation, transmission and distribution space, which will result into rising demand for transformers. The company's capex plan and marketing network expansion should help the bottomline to witness 53.3% CAGR over FY06-09E. The stock is currently trading at 12.4x and 8x FY08E and FY09E earnings of Rs24.1 and Rs37.5 respectively. We recommend a BUY rating to the stock representing an upside of 25.2%.

## Key Financials

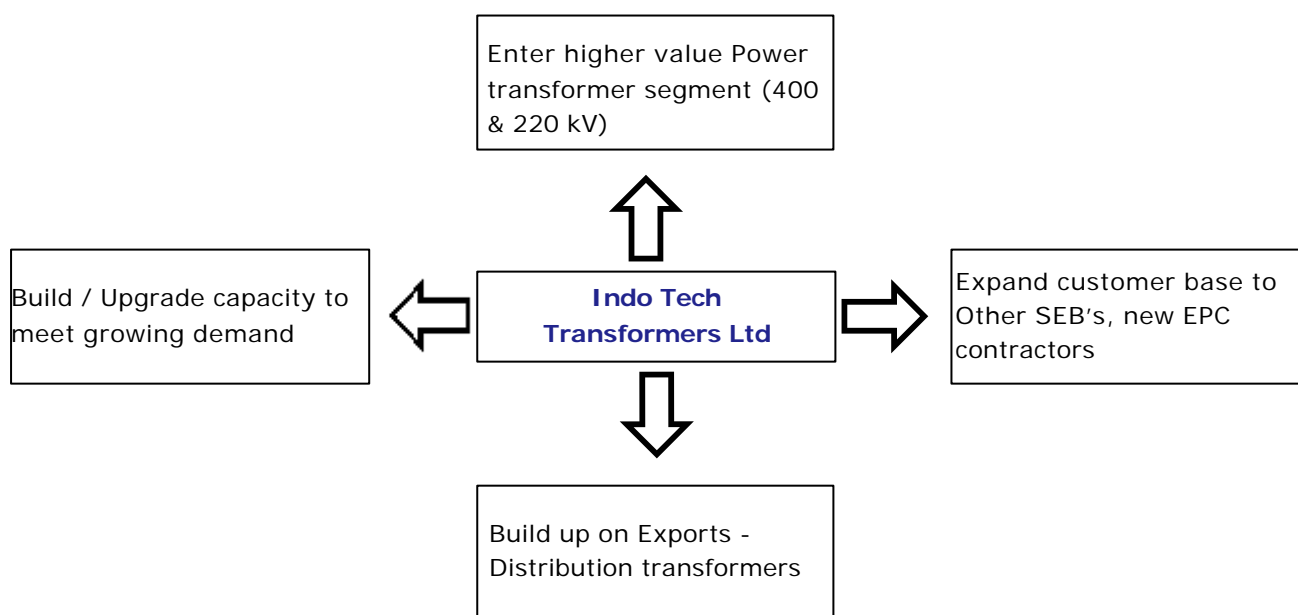
Period to (Rs mn)	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
Net sales	521	675	927	1,421	1,872	2,941
% yoy	47.7	29.5	37.5	53.2	31.7	57.1
OPM (%)	12.6	17.4	18.7	21.5	21.0	20.7
APAT	41	80	111	208	256	399
% yoy	188.6	96.5	38.2	88.5	22.9	55.5
Equity	28	28	106	106	106	106
EPS (Rs)	14.5	28.4	10.4	19.6	24.1	37.5
EV/EBIDTA (x)	12.2	6.3	15.1	9.1	7.4	4.5
ROCE (%)	35.7	46.6	24.6	33.8	32.2	38.0
RONW (%)	24.5	33.5	15.5	22.6	21.7	25.3
P/E (x)	20.7	10.6	28.8	15.3	12.4	8.0

Order book of Rs1.5bn, 1.7x FY06 revenues, provides some visibility for FY08

**Order book position of Rs1.5bn is 1.7x FY06 revenues**

ITTL has an unexecuted order book of Rs1.5bn, 1.7x its FY06 revenues of Rs927mn, at the end of Q3FY07. It comprises of orders of Rs1.4bn from State Electricity Boards (SEBs) and the remaining Rs320mn from industrial clients. Value of power transformers in the total order book stands at Rs1.4bn and the remaining comes from distribution transformers. With the spate of investments being announced in the country by both public and private sector, we believe that the order book of the company is only set to grow.

**Growth strategy**



Source: Company

More than doubling capacity to take advantage of upcoming demand

**Enhancing capacity to take advantage upcoming demand**

ITTL has three facilities, with a total installed capacity of 3,050MVA, from where it caters to the whole of the southern market. Two of these facilities are located in Saidapet and Thirumazhisai, Chennai and one at Palakkad in Kerala. At Saidapet and Palakkad it manufactures smaller range of distribution transformers while at Thirumazhisai it produces medium power transformers.

**Present production facilities**

	Thirumazhisai	Saidapet	Palakkad	Total
Facility for	Power Transformers	Medium sized and distribution transformers	Distribution transformers	
Installed annual capacity	2,400 MVA	450 MVA	200 MVA	3,050 MVA
Product range	3.15 - 100 MVA / 220 kV	100 KVA – 3.15 MVA / 33 kV	100 KVA - 10 MVA / 33 kV	-
Capacity utilized (FY2006)	85%	60%	30%	76%

Source: Company

Unplanned expansion to 2,400MVA from 1,800MVA

Relocated to Thirumazhisai with higher capacity

**Thirumazhisai (power transformer)**

At its Thirumazhisai facility, which commenced operations eight years ago, the company can produce up to 100 MVA/220 kV class range of power transformers. The facility is certified by TUV, Germany for internal quality systems to ISO 9001 – 2000 and was recently expanded to 2,400MVA from 1,800MVA earlier. This expansion has been done at the budgeted cost of Rs.36.5mn. The funding for this unplanned expansion was done through internal accruals.

**Saidapet (medium sized and distribution transformer)**

At Saidapet, with an installed capacity of 450MVA, it manufactures smaller range distribution transformers and limited big sized transformers. It manufactures industrial transformers and caters to demand from organizations serving the SEB's and industrial customers.

The company has relocated and commenced operations at Thirumazhisai with an installed annual capacity of 750MVA. This facility is technologically competitive with the larger players, thereby enabling it to improve productivity and reduce costs. The plant will be in a position to cater to demand of industrial transformers of 500KVA up to 3,150KVA/33kv class. The budgeted cost was Rs75mn and the actual cost incurred was Rs65mn and has been funded via term loans and internal accruals.

**Proposed production facilities**

	<b>Thirumazhisai Dry Type Plant</b>	<b>Thirumazhisai Distribution Transformer Plant</b>	<b>Kancheepuram Power Transformer Plant</b>	<b>Total</b>
Installed annual capacity	100 MVA	750 MVA	4,000 MVA	4,850 MVA
Product range	100 KVA – 2,500 KVA / 22kV	200 KVA – 5,000 KVA / 33 kV	up to 400 kV	
Commissioning Dates	Jan-06	Aug-06	Apr-07	Apr-07
Funding	IPO proceeds and debt	IPO proceeds and debt	IPO proceeds, internal accruals and debt	
Total cost involved				
-Budgeted (Rs mn)	20	75	306	401
-Actual expense (Rs mn)	15	65	486	566

Source: Company

Foraying into 400Kv transformers

**Fresh addition in power transformers**

The company is setting up a new power transformer plant at Kancheepuram with an annual capacity of 2400 MVA, which has now been scaled up to 4,000MVA. This facility marks the company's foray into the 400kV rating transformers, which will see demand from generating sites including the ultra mega power projects. The cost of the project, which is revised from the budgeted Rs306mn to Rs486mn, will be funded from IPO proceeds, internal accruals and loans from banks.

**Project details**

<b>(Rs mn)</b>	<b>Initial Project Proposal 2400 MVA/220 kV</b>	<b>Revised Project Proposal 4000 MVA/400 kV</b>
Land & Compound	50.0	107.5
Building	40.5	175.0
Plant & Machinery	137.9	150.0
Electricals	25.0	20.0
Testing	30.0	22.5
Other Infrastructure	10.0	0.0
Contingencies	12.6	11.0
Total	306.0	486.0

Source: Company



Entering into dry type transformers where margins are better

### Venturing into dry type transformers

ITTL will commence its dry type transformers operations by Q1FY08. Its product span ranges between 100KVA and 3,000KVA and will cater to industrial and corporate demand. It will target Software Technology Parks (STP's), hotels, hospitals, high rise buildings, etc. across the country. Recently ITTL signed a MoU with DUPONT for technical, marketing, analytical and business assistance for this facility. It will use the patented NOMEX aramide paper produced and supplied by DUPONT, which will give higher thermal capacity. This agreement shall be in effect from August 2006 and remain in effect till December 2008 and may be renewed by mutual consent. The budgeted cost was Rs20mn but the actual cost is re-estimated to be at Rs15mn and is being funded by term loans and internal accruals.

### Planned and Unplanned expansions

		Capacity (MVA)	Due date
<b>Planned expansions</b>			
Thirumazhisai			
-Distribution transformers	Relocation of Saidapet facility	750	Done
-Dry type transformers	Greenfield	100	Q1FY08
Kancheepuram	Greenfield (originally planned to be of 2,400MVA)	4,000	Q2FY08
<b>Unplanned expansions</b>			
Thirumazhisai			
-Power transformers	Brownfield, existing capacity of 1,800 MVA	2,400	Done
<b>Total capacity post expansion</b>		<b>7,450</b>	<b>Q2FY08</b>

Source: Company

### Cost of expansions

Project (Rs mn)	Budgeted cost	Actual cost involved
Kancheepuram Power Transformer Plant, 4000 MVA	306.0	486.0
Relocation & Expansion of Dist Transformer Plant of 750 MVA	75.0	65.0
Dry Type Transformer Plant of 100 MVA	20.0	15.0
Expansion of Thirumazhisai from 1800 to 2400 MVA	-	36.5

Source: Company

Post expansion, the company's installed capacity is set to more than double to 7,450MVA against the earlier planned 5,450MVA. The funding for the overall expansion of Rs602.5mn will be done via IPO proceeds of Rs384mn and term loans of 223.5mn. This enhanced capacity will help it capitalize on the investment boom in the sector both by the government and private sector. ITTL has in the past turned down orders from customers from other regions due to capacity constraints. However, now it will be able to cater to growing demand of transformers from other state electricity boards, EPC contractors, industrial and corporate clients.

### Product categories

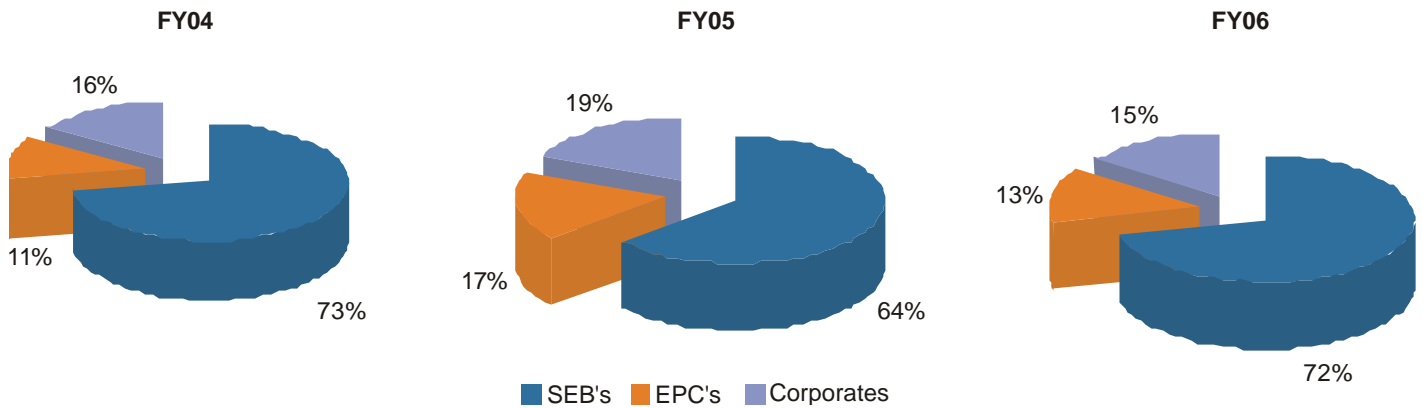
Product	Rating/class	Maximum capacity
Distribution Transformer	11/22/33 kV	2.5 MVA
Medium power transformer	66/110/132/220 kV	100 MVA
Specialized Transformer		
A) Wind mill applications	11/22/33 kV	250 KVA – 1,500 KVA
B) Dry type Transformer	11/22 kV	3.15 MVA
C) Induction Furnace	11/22/33 kV	3.15 MVA
D) Arc Furnace	33 kV	16 MVA
E) Mobile Transformer	230 kV	60 MVA
Unitized Sub station	33 kV	5 MVA

Source: Company

**Targeting new customer base**

The company conducts operations from South India with a strong customer base of over 3,000, which includes SEBs, EPC contractors, corporates and export clients and is amongst the preferred vendors. Its clientele consists of Tamil Nadu Electricity Board (TNEB), Andhra Pradesh, Karnataka and Kerala SEBs amongst electricity boards and L&T, ABB, Reliance Energy, etc amongst EPC contractors.

**Customer break-up**



Source: Company

*Focusing on creating pan India presence and targeting more of EPC and industrial clients*

*Locational advantage to ITTL, minimum outsourcing helps it score over its peers*

ITTL plans to expand its existing customer base by targeting newer markets like refineries, petro products, granite industries, paper, textile, steel and cement plants etc. The company's primary market is south but now intends to explore newer regions and avenues like turnkey contractors and similar customers. In the past it has supplied distribution transformers and medium sized transformers up to 25 MVA to various contractors like Reliance Energy, ABB, Crompton Greaves, L&T etc. It plans to target more of such companies for undertaking sub-contracting activities to supply power and distribution transformers. It is planning to tap the SEBs that have recently been privatized in the northern, western and the north eastern region.

It also exports to various countries like USA, UK, Canada, Ghana, Sri Lanka etc. However, with the quantum of business opportunity available within the country itself we see the contribution of exports to revenues to be miniscule. Most of the export revenues are from sale of mobile transformers to USA.

**Advantage ITTL...**

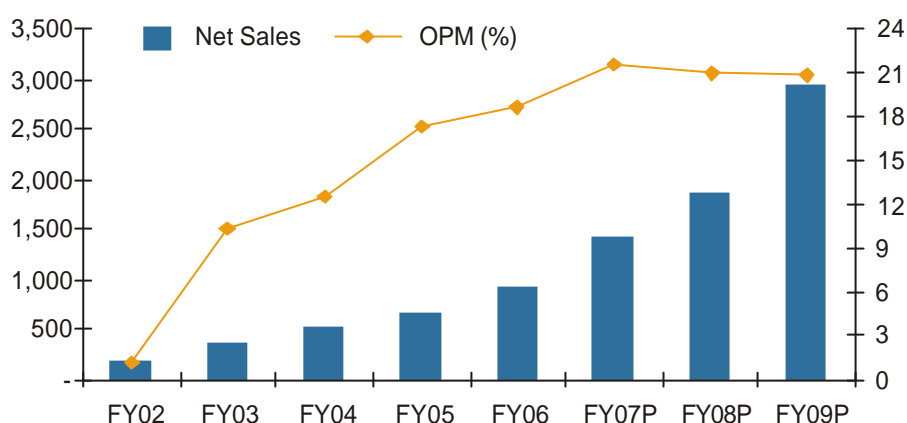
The company is amongst the largest players in South India, from where it carries out its operations. There were a few players in the region who have shut shop as they had become economically unviable to operate. Its closest competitors in the region were TELK, NGF and Alstom who have wound operations. The other competitors are Crompton Greaves, Areva and Vijai Electricals. To add to its locational advantage the company is amongst the lowest in turnaround time with strict delivery schedules and quick response to service calls, which helps them to maintain their customer base. Unlike some of the players the company resorts to minimum outsourcing, which is largely for converting copper into wire and CRGO slitting.

70% revenues from SEBs, better realizations help margins to stabilize at 20.7%

**Operating margins to stabilize at 20.7%**

The company bags majority of its orders from SEB's (70%) followed by EPC, industrial and corporate clients. Most of the orders have an in-built price variation clause, which is based on IEEMA Price Index, thereby allowing them to pass on any increase in prices of key raw materials. ITTL books its requirement of key raw materials and stocks it in order to avoid consequences of rising prices.

**Net sales and OPM (%)**



Source: Company, India Infoline Research

ITTL buys copper rods from a domestic manufacturer and outsources its conversion into the desired sizes. It buys material from one manufacturer, entitling it to volume discounts and follows this methodology for purchase of CRGO and copper, which form a major portion of its costs. Purchases of CRGO is made from ThyssenKrupp while that for copper is done from domestic players like Sterlite Industries (India) Ltd., Hindustan Copper, Birla Copper etc. Transformer prices are revised in accordance with the IEEMA price index.

During the year it executed orders, with price variation, where it witnessed higher realizations due to the time gap between delivery and making actual purchases and deliveries. Diligent purchase of raw material, benefits arising out of stable prices and improved realizations should enable ITTL to witness operating margins to stabilize at 20.7%.

**Quarterly performance**

Period to	12/06	09/06	06/06	03/06	12/05	09/05	06/05	03/05
(Rs mn)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Net sales	450	325	214	315	196	256	160	224
Expenditure	(332)	(257)	(177)	(272)	(149)	(201)	(142)	(189)
Operating profit	119	68	37	43	47	55	19	35
Other income	7	8	10	19	1	2	1	3
Interest	(2)	0	0	(3)	0	0	0	(3)
Depreciation	(3)	(3)	(2)	(2)	(3)	(2)	(2)	(3)
PBT	120	73	45	56	45	55	17	33
Tax	(48)	(27)	(13)	(17)	(18)	(18)	(5)	(14)
PAT	73	46	32	40	27	37	13	19
OPM (%)	26.3	21.0	17.3	13.5	23.9	21.6	11.5	15.8
NPM (%)	16.2	14.2	15.0	12.6	14.0	14.5	7.8	8.4

Source: Company

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#### Attractive valuation

Robust growth opportunity coupled with replacement demand and foray into newer markets provides clarity on the earnings front. In order to capture this opportunity ITTL is expanding its capacity from the current 2,450MVA to 7,450MVA, the full effect of which can be seen from FY08 onwards. It commenced operations of its 750MVA distribution transformer facility and also proposes to commission its new 100MVA dry transformer facility by Q1FY08. The company's order book of Rs1.5bn, which is 1.7x its FY06 revenues, is to be executed over the next 9-12 months. As a result, we expect the company's topline and bottomline to witness a 46.9% and 53.3% CAGR over FY06-09E respectively.

The company has nominal debt on its books and does not intend to raise any capital in the near future, keeping its debt equity low. All this should translate into an EPS of Rs24.1 and Rs37.5 for FY08E and FY09E respectively. At Rs300 the stock trades at 12.4x and 8x its forward earnings. We recommend BUY with a price target of Rs375 representing an upside of 25.2%.

## Company background

Indo Tech Transformers Ltd. (ITTL), commenced operations in 1976, and is today one of the prominent players in the transformer market. The company manufactures power and distribution transformers up to 100MVA/220kV and is in the process of enhancing this capacity to 200MVA/220kV.

### Milestones

Year	Milestones
1976	Commenced manufacturing of small distribution transformer at Saidapet and Palakkad
1987	Commenced manufacturing of industrial transformers
1994	Tie-up with M/s Allied Signals for transformers of Amorphous Metal Core Distribution Transformers
1995	Manufactured the Fail Safe Distribution Transformers and in-house developed the RADAC System
1997	Set up Thirumazhisai Plant and started manufacturing of 110,132 kV class of power transformers
1998	Commenced manufacture of Mobile Transformers and exports to USA
2001	Manufactured the first 230 kV class of transformers for Florida Power Corporation USA through MobleSource Industries Inc
2005	Merged group Indo Tech Electric Company Ltd with Indo Tech Transformers Ltd
2006	Listed on BSE and NSE

Source: Company

The company has executed orders for the North American markets for mobile transformers and substation transformers. The company has a strong presence in southern Indian SEB's and has built capabilities in various kinds of transformers like Wind Power, Fail Safe, Amorphous metal core.

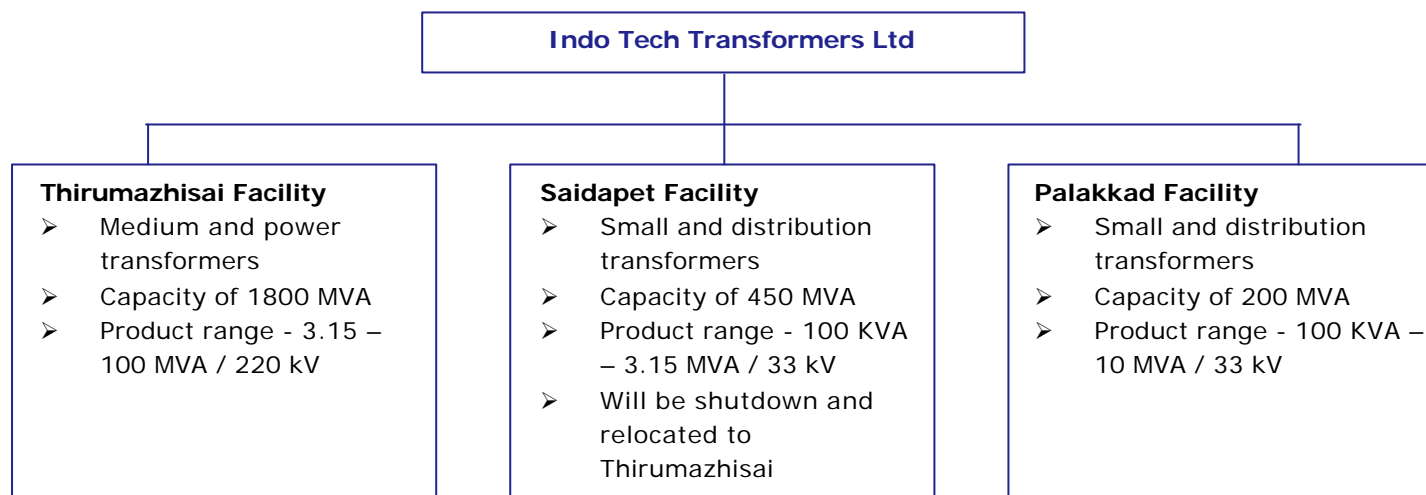
The key customer categories of the company are SEB's, EPC contractors, corporates and clients abroad. The company caters to most of the needs of the southern electrical boards. In EPC, it caters to L&T, ABB, Reliance Energy, etc. The company has also catered to the Taj group of hotels, Lakshmi Machine Works, IT group, Sanmar group, etc.

Since inception the company has served close to over 55,000 transformers of various capacities to more than 3,000 customers across India. In the export market the company serves to Nigeria, Sri Lanka, USA, UK, Ghana, Canada to name a few.

The company manufactures transformers out of its three facilities. Two of these are located in Chennai, Tamil Nadu; Thirumazhisai and Saidapet; and one in Palakkad, Kerala. The three plants are capable of manufacturing 500 – 600 transformers of various sizes every month. ITTL is relocating its Saidapet facility to Thirumazhisai, which will be a more modern facility with higher capacity.

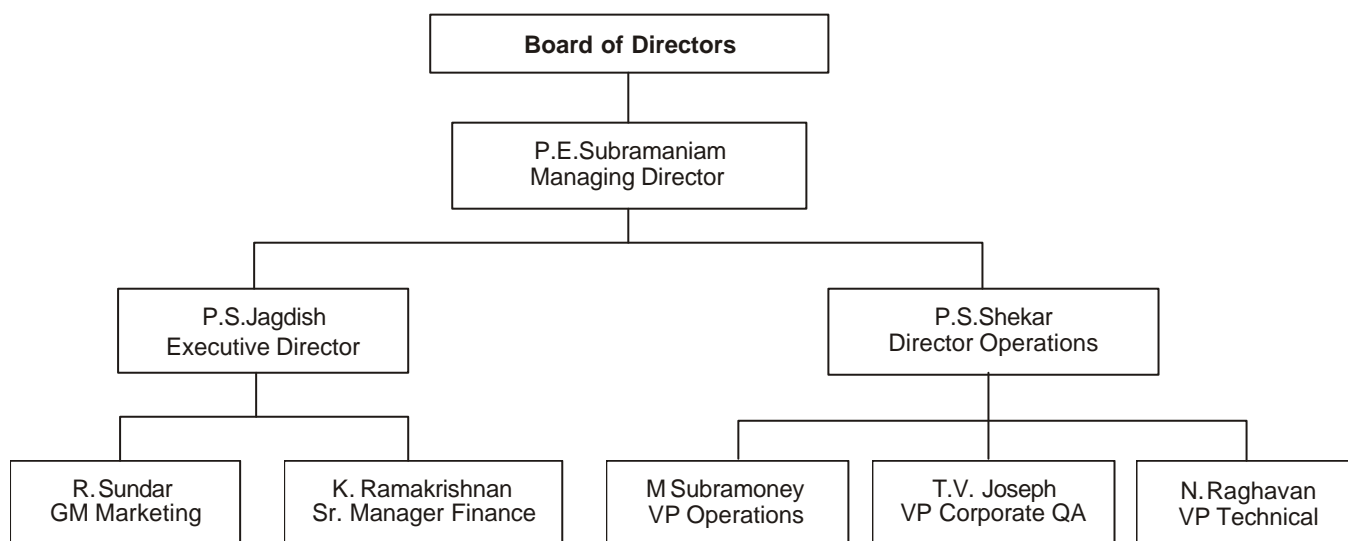
The company was listed on both the exchanges viz National Stock Exchange and Bombay Stock Exchange on 16<sup>th</sup> March 2006. ITTL issued 3,945,130 shares of Rs10 each at premium of Rs120 per share aggregating to Rs512.9mn. This 3.9mn shares consisted of a fresh issue of 2,906,750 shares to public, offer for sale of 397,480 shares of Rs10 each by Mr. P. S. Jagdish and 590,900 shares of Rs10 each by 21st Century Finance Ltd and 50,000 shares were reserved for the employees of the company. Total aggregate shares issued to the public stood at 3,895,130 shares at a premium of Rs120.

**Business model**



Source: Company

**Management profile**



Source: Company

**Concerns**

- ✓ ITTL has a major share of its revenues coming from South India. However, it now plans to venture to the other regions, which will reduce its dependence on any one region.
- ✓ The company's growth is dependent on the availability of key raw materials i.e. CRGO, copper and transformer oil at the right price as these are 65–70% of net sales. It has one supplier only for each of these three raw materials, which could spell trouble in case they are unable to supply.
- ✓ In line with the sector risks that are applicable to ITTL also, approximately 70%, of its revenues comes from sale to SEBs. However, it is focusing on tapping the industrial and the exports market, which will broaden the client base.
- ✓ The company could witness some pricing pressure when it ventures into other regions, which could result into lower revenues.

## Financials

### Projected Income Statement

Period to (Rs mn)	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
Net Sales	521	675	927	1,421	1,872	2,941
Operating expenses	(455)	(557)	(754)	(1,115)	(1,479)	(2,332)
Operating profit	65	117	173	306	393	610
Other income	3	4	8	30	25	25
PBIDT	68	121	181	336	418	635
Interest	(11)	(6)	(7)	(5)	(10)	(8)
Depreciation	(7)	(9)	(9)	(14)	(25)	(32)
Profit before tax (PBT)	50	106	165	316	383	595
Tax	(9)	(28)	(54)	(107)	(127)	(197)
Profit after tax (PAT)	41	78	110	208	256	399
Extraordinary items	-	2	0	-	-	-
Adjusted profit after tax (APAT)	41	80	111	208	256	399

### Projected Balance Sheet

Period to (Rs mn)	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
<b>Sources</b>						
Share Capital	28	28	106	106	106	106
Reserves	138	211	607	816	1,072	1,471
Net Worth	166	239	714	922	1,178	1,577
Loan Funds	26	21	20	71	120	95
Def Tax liability	18	18	16	45	50	50
<b>Total</b>	<b>210</b>	<b>279</b>	<b>750</b>	<b>1,038</b>	<b>1,349</b>	<b>1,722</b>
<b>Uses</b>						
Gross Block	150	165	181	525	783	803
Accd Depreciation	(55)	(61)	(70)	(84)	(110)	(142)
Net Block	95	104	111	441	673	661
Capital WIP	2	3	23	25	5	5
Total Fixed Assets	97	106	134	466	678	666
Investments	1	1	113	113	113	113
Total Current Assets	273	456	968	962	1,188	1,885
Total Current Liabilities	(161)	(284)	(466)	(504)	(631)	(943)
Net Working Capital	112	172	502	458	557	942
<b>Total</b>	<b>210</b>	<b>279</b>	<b>750</b>	<b>1,038</b>	<b>1,349</b>	<b>1,722</b>

**Key Ratios**

Period to	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
<b>Per share ratios (Rs)</b>						
EPS	14.5	28.4	10.4	19.6	24.1	37.5
Div per share	1.2	2.0	2.0	2.2	2.2	3.0
Book value per share	58.9	84.9	67.2	86.8	111.0	148.5
<b>Valuation ratios (x)</b>						
P/E	20.7	10.6	28.8	15.3	12.4	8.0
P/BV	5.1	3.5	4.5	3.5	2.7	2.0
EV/sales	1.6	1.1	2.9	2.1	1.7	1.0
EV/EBITDA	12.2	6.3	15.1	9.1	7.4	4.5
<b>Profitability ratios (%)</b>						
OPM	12.6	17.4	18.7	21.5	21.0	20.7
PAT	7.8	11.9	11.9	14.7	13.7	13.6
ROCE	35.7	46.6	24.6	33.8	32.2	38.0
RONW	24.5	33.5	15.5	22.6	21.7	25.3
<b>Liquidity ratios</b>						
Current ratio	1.7	1.6	2.1	1.9	1.9	2.0
Debtors days	109.7	105.5	89.0	95.0	95.0	95.0
Inventory days	38.6	55.6	49.1	50.0	50.0	50.0
Creditors days	81.6	95.1	109.9	103.0	103.0	103.0
<b>Leverage ratios</b>						
Debt / Total equity	0.15	0.09	0.03	0.08	0.10	0.06
<b>Component ratios (as % of net sales)</b>						
Raw material	73.0	69.4	69.9	67.7	68.2	68.6
Staff cost	4.5	3.5	2.7	2.2	2.2	2.2
Mnft. & Other expenditure	1.6	1.4	1.0	1.0	1.0	1.0
Administrative expenses	3.0	4.0	4.5	4.2	4.2	4.2
Sales expenses	5.3	4.2	3.2	3.3	3.3	3.3
Total operating expenses	87.4	82.6	81.3	78.5	79.0	79.3



# EMCO Ltd

## INITIATING COVERAGE

### Transformers to help topline register 46.3% CAGR over FY06-09E

EMCO Ltd.'s topline is expected to witness a 46.3% CAGR over FY06-09E backed by a robust order book of Rs10bn, 2.5x FY06 revenues. Transformers constitute 70% of the order book followed by projects at 27% and meters at 3%. This order book is executable over the next 12 months providing visibility for FY07 and FY08. Majority of the orders conferred upon the company are from State Electrical Boards (SEBs).

### Projects division to help growth

The company has been undertaking turnkey projects from concept to commissioning stage. Its order book of Rs2.7bn is executable partly during the quarter and the remaining during FY08. The division is expected to register 29.6% CAGR over FY06-09E.

### Margins expected to stabilize at 13.5%

Majority of the revenues accruing to the company will be contributed by the transformers division where margins are expected to improve due to better realizations. It practices normal hedging techniques and enters into price variation clause for majority of its contracts, which helps it to insulate its margins.

### Venturing into switchgears and power generation

EMCO plans to enter into switchgear manufacturing coupled with power generation in order to derisk its existing business model. It intends to set up a 135MW coal based thermal power plant at Chandarpur, Maharashtra. Power generation will come under a separate entity EMCO Energy Ltd whereas switchgear will be under EMCO Ltd. Its admission into this field will make it an integrated power player.

### Valuation

With faster execution of orders, strong order intake and improving margins from 12.8% in FY06 to 13.5% in FY07E, provides significant upside to the company's bottomline. We expect the company's topline and bottomline to grow at 46.3% and 68.4% CAGR respectively over FY06-09E. The stock is currently trading at 14x and 9.9x earnings of Rs62.8 and Rs88.9 for FY08E and FY09E respectively. We initiate coverage on the company with a BUY recommendation and a price target of Rs1,067, an upside of 21.2%.

### Key Financials

Period to (Rs Mn)	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
Net sales	1,536	2,359	4,054	6,313	9,159	12,693
% yoy	19.0	53.6	71.8	55.7	45.1	38.6
OPM (%)	14.5	13.0	12.8	13.5	13.5	13.5
APAT	40	96	191	421	643	910
% yoy	54.3	138.7	98.5	120.5	53.0	41.5
Equity	58	61	76	102	102	102
EPS (Rs)	6.9	15.7	25.0	41.1	62.8	88.9
EV/EBIDTA (x)	26.3	20.7	14.8	10.7	8.2	6.6
ROCE (%)	14.8	16.2	21.6	17.8	23.0	26.5
RONW (%)	5.8	13.1	14.2	13.1	18.0	21.8
P/E (x)	127.0	56.0	35.3	21.4	14.0	9.9

### Stock Data

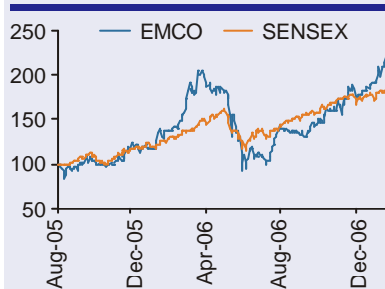
Target Price	Rs1,067
Upside	21.2%
Sensex	14,516
52 Week H/L	Rs879 / 357
Average Volumes (6m)	10,901
Market Cap	Rs9bn
Face Value	Rs10
BSE Code	504008
NSE Code	EMCO
Bloomberg	EMCO.IN
Reuters	EMCO.BO

(Price as on 5th Feb' 07)

### Share Holding Pattern

Dec'06 (%)	(%)
Promoters	32.6
Non Promoter Corp Holding	14.4
Institutions	15.3
Foreign	28.1
Public & Others	9.6

### Share Price Trend



Best order book to sales in the industry at 2.5x FY06 revenues

Third largest player in the industry with 12% market share

### Strong order book provides visibility for future

The company's robust order book position of Rs10bn, 2.5x FY06 revenues, provides significant visibility for the next 12 months. About Rs2.5bn (25%) of this order book is to be executed during Q4FY07. We estimate revenues for the year to stand at Rs6.3bn with transformers, projects and meters contributing 71.7%, 19.7% and 8.5% respectively.

### Order book break-up

Particulars (Rs mn)	Order book	Q3FY07	9MFY07	FY07E	FY08E
Order book as on date	10,050	1,632	4,042	6,313	9,159
Transformers	7,035	1,289	3,193	4,530	6,787
Electronic meters	302	131	283	539	755
Projects & others	2,714	212	566	1,244	1,618

Source: Company, India Infoline Research

The company is undergoing capacity expansion, from 10,000MVA to 20,000MVA which is expected to be through by FY07. This coupled with robust demand scenario encourages us to believe EMCO's topline will register 46.3% CAGR over the same period.

### Transformers continue to dominate with 71.2% share in revenues

EMCO Ltd, manufactures a wide range of power and distribution oil filled transformers. It also has its presence in furnace, rectifier and loco transformers. It is the third largest player in the transformer industry only after BHEL and Crompton Greaves with a market share of about 12%. It is amongst the larger players in the 132kV and 220kV range of transformers controlling about 22% and a leader in special transformers like furnace and rectifier transformers.

### Product portfolio

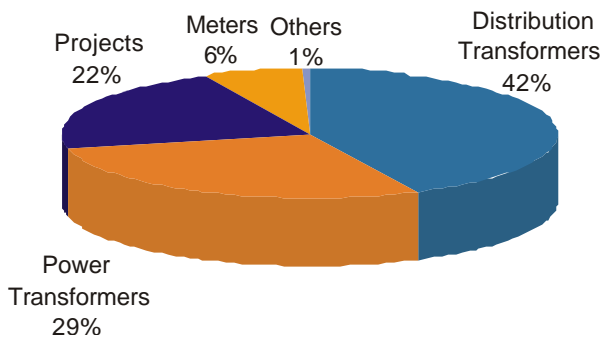
	Range	Voltage	Type
Power Transformers	Up to 315 MVA	Up to 400kV	Generator, auto, station and unit auxiliary transformers, system transformers and multi winding transformers for specific needs
Distribution Transformers	Up to 16 MVA	Up to 66kV	Industrial transformers, Substation transformers and distribution transformers
Furnace Transformers	Up to 150 MVA	Up to 33kV	Arc / Submerged arc / Ladle / Induction furnace transformers
Rectifier Transformers	Up to 160 KA DC	Up to 33kV	Six pulse with IPT and 12 pulse with IPT (Double bridge construction)
Traction Transformers	Up to 50 MVA single phase	Up to 220kV class	Single phase AC traction
Locomotive Transformers	Up to 7.5 MVA single phase and three phase	25kV	
Small Distribution Transformers	10KVA up to 500 KVA	Up to 33kV	Single / three phase Al/Cu wound for APDRP and HVDS schemes

Source: Company

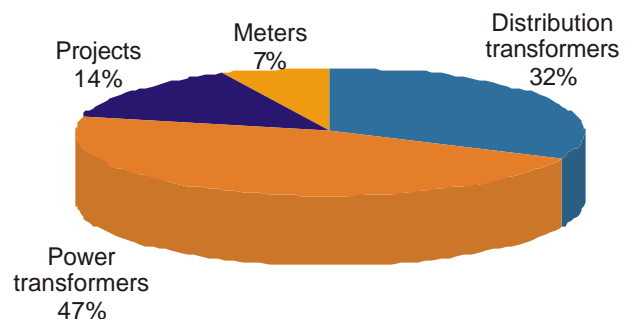
It has two facilities in Jalgaon and one in Thane from it carries out its operations. Two of these plants are ISO 9001:2000 accredited by BVQI and testing facilities also comply to IS, IEC and ANSI standards. Its product portfolio for power and distribution transformer ranges from 500KVA/11kV to 315MVA/400kV and recently introduced single phase and three phase distribution transformers from 10KVA to 500KVA. It is an approved supplier to the Indian Railways and has been supplying trackside and locomotive transformers.

**Revenue break up for FY06 and 9MFY07**

**FY06**



**9MFY07**

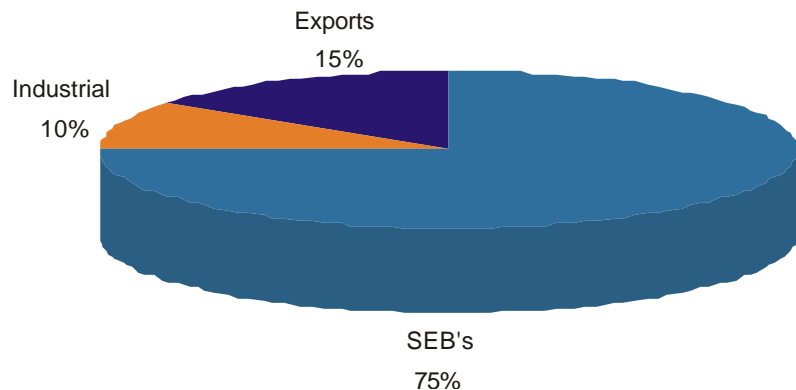


Source: Company

75% of revenues come from SEBs, 15% from exports and balance from industrial clients

EMCO sells about 75% of its transformers to State Electricity Boards (SEB's), 15% in export market and the balance to the industrial consumers like Tata Power, Suzlon, Siemens, L&T, etc. It exports mainly to developing countries viz South Africa, Bahrain, Jordan, Sudan, Vietnam, Syria and Saudi Arabia. Coupled with this it also exports to North America and Australia.

**Customer-wise break up for FY06**



Source: Company

EMCO's transformer division has an order book of Rs7bn of which about Rs1.3bn is to be executed during Q4FY07. In addition to this it generated revenues of Rs3.2bn in 9MFY07 resulting into total revenues of Rs4.5bn for the division during the year. With SEB's being the major contributor to this order book, margins are insulated as contracts have an inbuilt escalation clause. Hence any rise in prices of key raw materials is always passed on to the client.

Doubling capacity to 20,000MVA ahead of plan to take up more orders

22% market share in 132/220Kv rating

Division to benefit from outsourcing activities and APDRP

### Expanding capacity to take advantage of upcoming demand

With the growth in the sector becoming irreversible, order book of the company is only set to grow. EMCO's current order book is 2.5x FY06 revenues. It is preparing to capitalize on the upcoming demand in the sector by doubling capacity to 20,000MVA by March 2007, which is ahead than the original schedule of FY08. This is expected to cost the company approximately Rs200mn, which will be funded out of internal accruals. During FY06 it enhanced its transformer capacity to 10,000MVA from 8,500MVA.

### Capacity expansion plan

Location	Current capacity (MVA)	Expansion (MVA)	Expanded capacity(MVA)
Thane facility	8,500	7,500	16,000
Jalgaon facility	1,500	2,500	4,000
<b>Total</b>	<b>10,000</b>	<b>10,000</b>	<b>20,000</b>

Source: Company

### Growth sustainability

The company is the third largest player only to follow BHEL and Crompton Greaves, with a 12% market share. It is amongst the larger players in the 132kv and 220kv ratings of transformers with about 22% market share in this segment. The company plans to leverage its identity in order to capitalize on potential demand over the next five years not only from the government side but also from industrial capex.

### Meters division to experience 50.2% CAGR over FY06-09E

EMCO diversified into manufacturing electronic meters with an annual capacity of 1.3mn units and Energy Metering Services in technical tie up with M/S Grintek, South Africa. It offers metering solutions including Automatic Metering Reading and prepaid meters for single phase and polyphase applications. The division's utilization was meager 14.8% during FY05 improving to 30% in FY06.

Under the APDRP, we expect the meters market to witness huge demand going forward. The company has a confirmed order book of Rs302mn for its meters division, which is executable over Q4FY07 and partly during FY08. We expect the division to grow at 50.2% CAGR over FY06-09E taking the total revenues to Rs539mn and Rs755mn for FY07E and FY08E respectively.

### Exploring export market

The company's International division focuses on giving EMCO an exposure in the export market. It plans to up its meters division utilization by undertaking outsourcing activities for various players in export markets. In the past it has executed orders for a German company, which provides it a window to the European market. Demand from here will largely be replacement demand. Coupled with this it will also target the developing countries where power reforms are underway. However the contracts that the company undertakes here will all be fixed price. The company recently bagged orders for 30 transformers of 30MVA from Syria during FY06.

### Projects to help derisk business

The company has been executing turnkey projects since the past few years from concept to commissioning stage. It not only undertakes deals regarding technical aspects but also designing and engineering, project management, erection, testing and commissioning.

EMCO has an order book of Rs2.7bn for this division including Rs1.1bn order from Maharashtra State Electricity Distribution Company Ltd (MAHADISCOM). The order involves setting up of three substations as well as revamping and upgradation of Thane Distribution network. This project is to be completed within a period of 12 months and will be funded under the APDRP scheme. Many such projects are expected to be announced with the government's emphasis being on effective distribution of power. EMCO, should be in a position to bag a few of these orders due to its execution skills.

**Projects executed in the past**

Contractee	Project details
Maharashtra State Electricity Board	Supply, erection, testing and commissioning 220/132kV outdoor switchyard on turnkey basis for substation at Beed Supply, erection, testing and commissioning 220/132kV outdoor switchyard on turnkey basis for substation at Kaulewada
Oswal Engineering and Projects	Supply, erection, testing and commissioning 220/22kV 50MVA transformer and associated equipments for 2 bay 220kV and 7 bays of 22kV
Chhattisgarh State Electricity Board	Supply, erection, testing and commissioning 132kV switchyard for OCFL's DAP Phosphate fertilisers complex at Paradeep 40MVA 132/33kV substation at Rajim consisting 3x132 kV bays with capacitor installations 40MVA 132/33kV substation consisting 3x132kV, 4x132kV bays and capacitor installations

Source: Company

**Projects under execution**

Contractee	Project details
Maharashtra State Electricity Board under APDRP scheme at Nashik	5x5MVA 33/11kV substation, 70x11kV outdoor bay extensions, 570 distribution transformer centres, 70 capacitor banks, 45kmx33kV lines 850kmx11kV lines and 100km of LT lines
TNEB through M/S Suzlon Developers Pvt Ltd, Pune	2x50MVA 230/33kV substation at Sangneri under Suzlon Windmill Project consisting of 5x230kV bays and 8x33kV bays
Chhattisgarh State Electricity Board	40MVA 132/33kV substation consisting of 5-132kV bays, 433kV bays and capacitor installation at Dhamda (Durg Dist)

Source: Company

During 9MFY07 the company earned revenues of Rs566mn and the order book provides visibility for another Rs678mn for the year. We expect the revenues from the division to grow at 29.6% CAGR over FY06-09E with revenues of Rs1.2bn and Rs1.6bn during FY07E and FY08E respectively. Normally margins for the division range from 9-11%, however EMCO should experience higher margins courtesy captive transformers, switchgears and meters.

**Further de-risking – switchgears and power generation**

The company intends to foray into switchgears and power generation. In order to derisk its business model it is venturing into these two new avenues. Although there is not much clarity on the switchgear front, the progress of the power plant is on schedule. It recently underwent a QIP of 2mn equity shares at Rs600 per share. The funds raised from here will be used to fund the 135MW coal based power plant at Chandrapur district, Maharashtra at an estimated cost of Rs6.2bn. The remaining Rs5bn of the capex will be funded out of debt. This investment will be done through a separate SPV, EMCO Energy Ltd, in which EMCO will be a majority shareholder. The company has tied up for its coal requirements and has issued tenders for the EPC work of the plant.

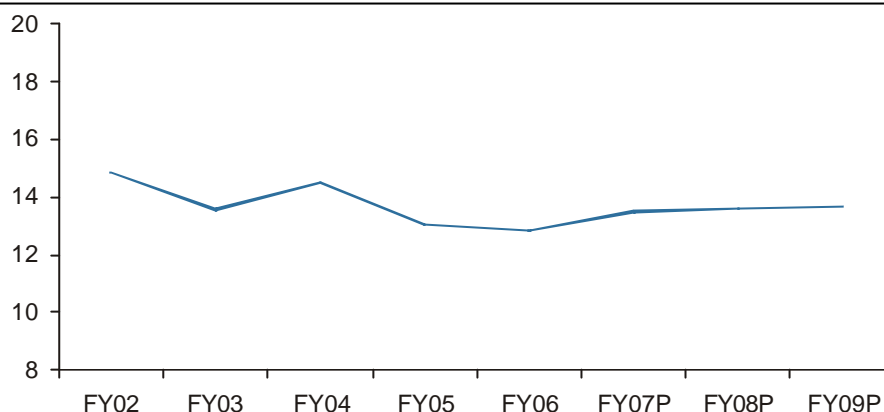
*De-risking strategy by venturing into switchgears and setting up of 135MW coal based thermal power plant*

Stable realizations and cost pass through to help margins to sustain at 13.5%

**Improved realizations and internal sourcing to enhance margins**

Operating margin for the company declined from 13% in FY05 to 11.3% in FY06 after considering Rs62.3mn one time write off during the year. However, on negating this margins for the year stood at 12.8%. For the past couple of years commodity prices have been rising which is reflected in rising raw material cost (as a % of net sales). This resulted into partial squeezing of margins. Players in this industry use IEEMA price index to price their products, which enables them to pass through all price increases.

**Operating profit margin (%)**



Source: Company, India Infoline Research

EMCO receives about 75% of its revenues from SEB's which have an in built escalation clause, thereby insulating margins to that extent. The company sources its requirements of copper from domestic players i.e. Hindalco and Sterlite and CRGO from various international players like Thyssen and Nippon. It hedges its position in copper in order to protect itself from any vagaries in the prices. Coupled with this margin from its projects division should also expand, which will be due to use of captively manufactured equipments. Bought out items in projects are as high as 75-80% with majority of the costs being that for transformers and switchgears. All this should enable EBIDTA margins to improve to 13.5%.

**Quarterly performance**

Period to	12/06	09/06	06/06	03/06	12/05	09/05	06/05	03/05
(Rs mn)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Net sales	1,632	1,305	1,106	1,698	971	761	623	765
Expenditure	(1,410)	(1,128)	(957)	(1,546)	(845)	(663)	(542)	(680)
Operating profit	222	177	148	152	126	98	81	85
Other income	0	0	0	0	0	0	0	(1)
Interest	(44)	(40)	(26)	(32)	(34)	(24)	(27)	(28)
Depreciation	(15)	(14)	(15)	(15)	(14)	(14)	(14)	(11)
PBT	162	123	107	105	78	61	40	45
Tax	(63)	(36)	(32)	(60)	(18)	(10)	(5)	(14)
PAT	99	87	75	45	61	51	35	31
OPM (%)	13.6	13.5	13.4	9.0	13.0	12.9	13.0	11.1
NPM (%)	6.1	6.7	6.8	2.6	6.2	6.7	5.6	4.1

Source: Company

**Valuation**

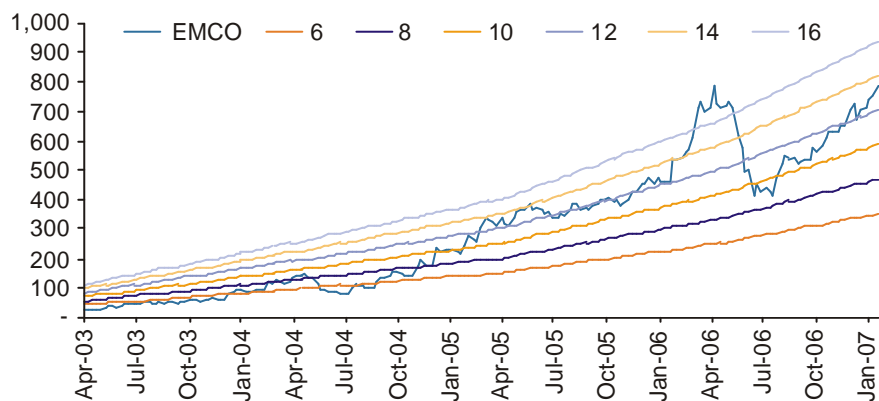
EMCO is in the process of doubling its capacity from the current 10,000MVA to 20,000MVA, in order to take advantage of industry growth. The meters division, which is underutilized will also pick up with the implementation of APDRP and plans to enter the export market. Under APDRP it is expected to bag substation projects, which will also propel growth going forward.

The company's total order book of Rs10bn, about 25% of which is executable over the fourth quarter. The order book to sales stands at 2.5x its FY06 revenues is the best in the industry. It witnessed an improvement in its operating margins from 12.8% in FY06 to 13.5% in 9MFY07. We expect this to remain stable at 13.5% going forward.

Its efforts to derisk, EMCO is venturing into switchgears that are used in projects it undertakes. It is also planning a foray into power generation by setting up a 135MW coal based thermal power plant at Chandrapur in Maharashtra under a separate entity EMCO Energy Ltd.

Its expansion plans, robust order book, changing product mix and huge investments in the sector should enable the company's topline to witness a 46.3% CAGR over FY06-09E and its bottomline to register a CAGR of 68.4% over the same period. This translates into an EPS of Rs62.8 and Rs88.9 for FY08E and FY09E respectively. At Rs880 the stock trades at 14x and 9.9x its forward earnings. We initiate coverage on the stock with a BUY recommendation and a price target of Rs1,067 representing an upside of 21.2%.

**P/E Band**

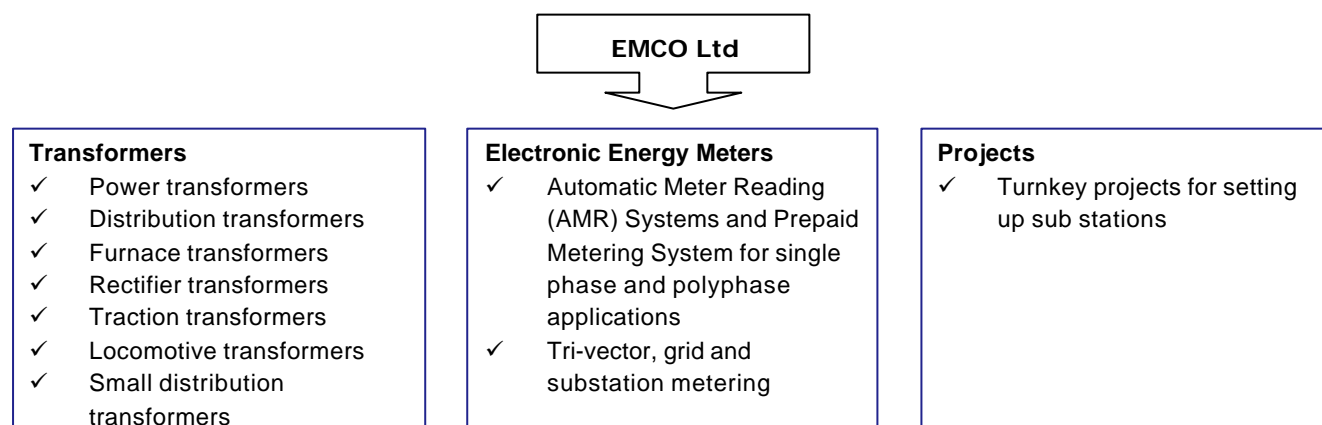


Source: India Infoline Research

## Company background

EMCO, one of the leading solution providers in the power sector is amongst the largest manufacturers of the transformers in the country. It controls about 12% of the market and ranks third only after BHEL and Crompton Greaves. It is also the market leader in single phase electronic energy meters with a capacity of 1.3mn meters per annum. It has a project group, which undertakes large electrical projects from concept to commissioning. It also offers solutions in the area of power automation through it's SCADA group which focuses in the area of power automation and demand side management. It has evolved itself over the years from being a product seller to a solution provider using the Information Technology. It now provides IT solutions to companies in distribution and automatic meter reading in power distribution business. It has specialists working in these areas who are industry experts. Emco has 4 manufacturing plants, 10 offices & 850 people in India and ISO 9001:2000 certification for most of it's businesses. Winning ISO 14001 and OHSAS 18001 Certificates adds to the company credibility. The company also has its offices in America, Africa, Middle East, South East Asia and Australia with international installations in these countries.

## Business model



Source: Company

## Management profile

Name	Designation
Rajesh S Jain	Chairman & Managing Director
Shailesh S Jain	Managing Director
R S Shah	Director (Technical)
T N V Ayyar	Director
Bheru Choudhary	Director
S V Deo	Director
Priti Alkari	Company Secretary
K N Shenoy	Additional Director

Source: Company



**Present production facilities**

Facility	Product range
<b>Transformers</b>	
<b>Thane</b>	
-Power Range	10MVA/66kV - 315MVA/400kV
<b>Jalgaon</b>	
-Industrial Range	500KVA - 16MVA/33kV
-Distribution	500KVA and below
<b>Meters</b>	
Dadra	All types of electronic energy meters

Source: Company

**Concerns**

- ✓ Demand for transformers is dependent on the speed of reforms undertaken by the Government in the power sector. Since this is a politically sensitive issue there could be a delay in implementation, resulting in subdued growth opportunity.
- ✓ It has been witnessed that projects undertaken by the government have been delayed resulting into lower achievement of targeted growth. This could be experienced in future too, which could affect our estimates.
- ✓ The company operates in a working capital intensive industry with payment cycles being long.
- ✓ The company has no prior experience in setting up a power plant, hence it stands the risk of timely and efficient execution of the project.

## Financials

### Projected Income Statement

Period to (Rs mn)	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
Net Sales	1,536	2,359	4,054	6,313	9,159	12,693
Operating expenses	(1,314)	(2,052)	(3,534)	(5,462)	(7,919)	(10,984)
Operating profit	222	308	520	851	1,240	1,709
Other income	1	0	0	0	0	0
PBIDT	223	308	520	851	1,240	1,709
Interest	(121)	(136)	(118)	(152)	(201)	(268)
Depreciation	(51)	(52)	(57)	(67)	(72)	(73)
Profit before tax (PBT)	50	120	346	632	967	1,368
Tax	(9)	(25)	(93)	(212)	(324)	(458)
Profit after tax (PAT)	41	95	253	421	643	910
Extraordinary items	(1)	1	(62)	-	-	-
Adjusted profit after tax (APAT)	40	96	191	421	643	910

### Projected Balance Sheet

Period to (Rs mn)	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
<b>Sources</b>						
Share Capital	58	61	76	102	102	102
Share Warrants		3	9	218	-	-
Reserves	635	669	1,257	2,899	3,466	4,079
Net Worth	693	732	1,342	3,219	3,569	4,182
Loan Funds	809	1,169	1,063	1,576	1,831	2,281
Def Tax liability	90	82	71	90	95	100
<b>Total</b>	<b>1,593</b>	<b>1,983</b>	<b>2,476</b>	<b>4,885</b>	<b>5,494</b>	<b>6,562</b>
<b>Uses</b>						
Gross Block	887	1,004	1,078	1,278	1,375	1,389
Accd Depreciation	(333)	(429)	(484)	(550)	(621)	(693)
Net Block	553	575	594	728	754	696
Capital WIP	26	40	1	40	50	50
Total Fixed Assets	579	615	595	768	804	746
Investments	5	6	10	10	260	510
Total Current Assets	1,554	2,264	3,546	6,631	8,041	10,283
Total Current Liabilities	(548)	(902)	(1,675)	(2,523)	(3,610)	(4,976)
Net Working Capital	1,006	1,362	1,871	4,107	4,430	5,306
Miscellaneous expenditure	2	-	-	-	-	-
<b>Total</b>	<b>1,593</b>	<b>1,983</b>	<b>2,476</b>	<b>4,885</b>	<b>5,494</b>	<b>6,562</b>

**Key Ratios**

Period to	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
<b>Per share ratios (Rs)</b>						
EPS	6.9	15.7	25.0	41.1	62.8	88.9
Div per share	1.0	2.4	3.0	3.5	3.5	4.0
Book value per share	119.3	119.8	175.7	314.4	348.5	408.4
<b>Valuation ratios (x)</b>						
P/E	127.0	56.0	35.3	21.4	14.0	9.9
P/BV	7.4	7.3	5.0	2.8	2.5	2.2
EV/sales	3.8	2.7	1.9	1.4	1.1	0.9
EV/EBIDTA	26.3	20.7	14.8	10.7	8.2	6.6
<b>Profitability ratios (%)</b>						
OPM	14.5	13.0	12.8	13.5	13.5	13.5
PAT	2.6	4.1	4.7	6.7	7.0	7.2
ROCE	14.8	16.2	21.6	17.8	23.0	26.5
RONW	5.8	13.1	14.2	13.1	18.0	21.8
<b>Liquidity ratios</b>						
Current ratio	2.8	2.5	2.1	2.6	2.2	2.1
Debtors days	229.7	201.9	193.1	189.7	189.7	189.7
Inventory days	102.7	97.9	96.4	95.0	95.0	95.0
Creditors days	116.6	124.5	142.1	140.0	140.0	140.0
<b>Leverage ratios</b>						
Debt / Total equity	1.17	1.60	0.79	0.49	0.51	0.55
<b>Component ratios (as % of net sales)</b>						
Raw material	67.5	71.9	75.7	75.8	75.9	76.0
Power and fuel	1.0	0.7	0.5	0.4	0.4	0.4
Staff cost	5.1	4.0	3.4	3.1	3.0	3.0
Mfg. & Other expenditure	11.1	9.9	7.1	6.8	6.8	6.7
Freight	0.9	0.4	0.5	0.5	0.5	0.4
Total operating expenses	85.5	87.0	87.2	86.5	86.5	86.5

# Voltamp Transformers Ltd

## Stock Data

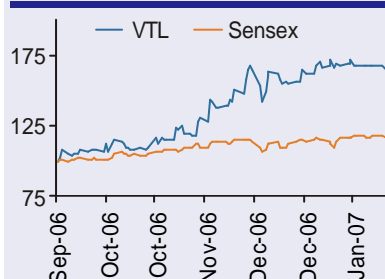
Target Price	Rs816
Upside	16.0%
Sensex	14,516
52 Week H/L	Rs734 / 369
Avg Quarterly Volumes	418,724
Market Cap	Rs7.1bn
Face Value	Rs10
BSE Code	532757
NSE Code	VOLTAMP

(Price as on 5th Feb '07)

## Share Holding Pattern

Dec '06	(%)
Promoters	51.7
Non Promoter Corp Holding	3.7
Institutions	13.7
Foreign	23.7
Public & Others	7.3

## Share Price Trend



## Strong industrial demand to fuel order intake

Voltamp Transformers Ltd (VTL) has a confirmed order book of Rs3.6bn, which in addition to 9MFY07 revenues of Rs2.8bn provides visibility for the remaining part of the year and also for some part of FY08. With huge industrial capex lined over the next three to four years provides significant visibility for upcoming demand for transformers. This order book of the company is only set to grow courtesy this capex.

## Sale of dry type transformers to drive 54bps expansion in margins

With focus being on industrial sales and sale of dry type transformers where margins are better, we expect operating margins for the company to expand to 14.2% by FY09E. This will be driven by the capex in the industrial segment and greater emphasis on modernization of airports, robust growth in retail space and entertainment areas, urbanization of tier II and tier III cities, etc

## Capex planned in non-SEBs will prove beneficial

The company caters to the non-SEB segment that is witnessing an upsurge in capex. This is likely to drive demand over the next five years. VTL plans to tie up with EPC contractors like ABB, Siemens and L&T for projects where transformers will be required. We expect VTL to lead the pack in this space with its high brand recall as compared to peers and a client base of 400 BSE listed companies. Repeat order flow will help sustain revenues for a number of years.

## Return ratios amongst the best in the industry

The company has historically maintained ROCE of ~43% and RONW of ~33%, which is mainly due to high asset turnover of about 3x, prudent financial management and higher retained earnings.

## Valuation

The company is set to witness strong growth over the next couple of years, which will be driven by huge industrial capex. Coupled with this it has the best return ratios in the industry, which we expect will continue going forward too. The stock is currently trading at 13.6x and 10.3x its FY08E and FY09E earnings of Rs51.5 and Rs68 respectively. We recommend HOLD on the company with a price target of Rs816, an upside of 16%.

## Key highlights

Period to (Rs mn)	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
Net sales	1,100	1,744	2,488	3,872	5,614	7,298
% yoy	63.5	58.5	42.7	55.6	45.0	30.0
OPM (%)	13.7	13.3	13.6	14.0	14.1	14.2
APAT	100	150	230	369	522	688
% yoy	84.2	50.2	53.6	60.2	41.5	31.9
Equity	7.8	101.2	101.2	101.2	101.2	101.2
EPS (Rs)	128.1	14.8	22.7	36.4	51.5	68.0
EV/EBIDTA (x)	3.3	27.6	19.1	11.8	8.5	6.5
ROCE (%)	43.0	43.5	43.0	50.0	47.8	45.1
RONW (%)	30.3	31.8	33.1	35.0	33.5	30.9
P/E (x)	5.5	47.5	30.9	19.3	13.6	10.3

Rs3.6bn order book and still growing, emphasizing on short duration orders

**Order book of Rs3.6bn and rising**

VTL has an order backlog of Rs3.6bn, with about Rs1bn to be executed over the last quarter. 95% of these orders are from industrial clients where contracts are for a fixed price. VTL caters to demand from the engineering and industrial segments and is approved with the major EPCs viz ABB, Siemens and L&T. It provides them with customized transformers required for executing their client's projects. Most of the engineering consultancy firms have approved company's products. With large capex being announced by various industries, VTL's order book is also set to head northwards due to its strong brand recall that has been created over the past many years. There is higher predictability of order inflow from the industrial segment, which is supported from repeat orders that it has been gaining in the past.

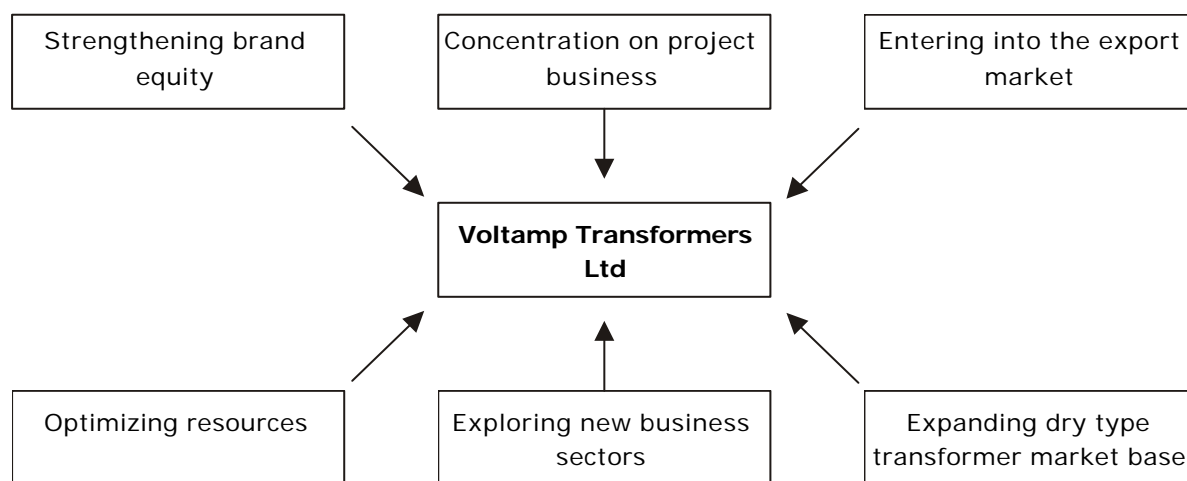
Coupled with this the company is prequalified with SEBs providing itself a cushion to fall back in case of any slowdown in orders from the industrial side. The company's policy of keeping short tenure order books helps it keep its capacity free in order to undertake last minute orders.

**Industrial capex announced, proposed and under implementation**

Total Investment (Rsbn)	Announced	Proposed	Under implementation	Total
Metal	3,020	836	544	4,400
Oil	472	529	749	1,751
Cement	120	38	36	194
Others	1,290	698	544	2,532
<b>Total</b>	<b>4,902</b>	<b>2,101</b>	<b>1,873</b>	<b>8,876</b>

Source: Company

**Growth strategy**



Source: Company

Diversified client base, non dependence on any single client for revenues

**Diversified client base ensures repeat orders**

VTL has a unique business model of catering to the industrial clients from petrochemicals, oil refining, cement, paper and pulp, pharmaceuticals, automobiles, steel, power plant, construction, metro rail applications, mining and minerals. It has been successful in maintaining its leadership position in this segment. Over the past 38 years, the company has developed strong reputation for itself, with its client database consisting of about 850 companies. High repeat orders in the past induce us into believing that this trend will continue in future – the main assumption for our estimate for a topline CAGR of 43.1% over FY06-09E. Higher exposure to the industrial clients enables the company to be successful in keeping its receivable period low at 56 days as compared to its peers of well over 100 days.

**Product range**

Type of transformer	Range	Types
Distribution Transformer	500KVA, 11kV to 5,000KVA, 33kV	Generator Transformer, Unit Auxiliary Transformers, Step up & Step down Transformers, Interconnecting Auto Transformers, Dual Voltage Primary or Secondary Three winding Transformers
Power Transformer	Above 5,000KVA, 33kV to 50,000KVA, 132kV	Earthing Transformers, Three winding Transformers, Thyristor Duty Transformers, Induction Furnace Transformers, Step up & Step down Transformers, Dual voltage Primary and Secondary.
Dry Type Transformer	63KVA (Dry Type) to 7500KVA (CRT)	Drive Isolation Transformers, Lighting Transformers and Step up & Step down Transformers

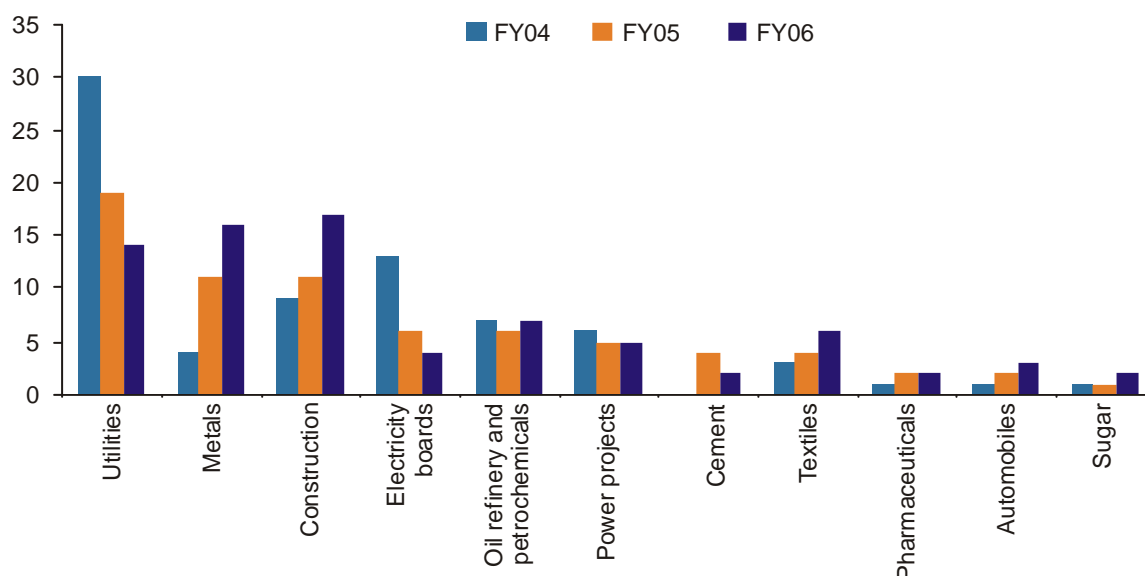
Source: Company

**Customer wise revenue break up**

	FY03	(%)	FY04	(%)	FY05	(%)	FY06	(%)
EPC Contractors	256	38.0	485	44.0	586	33.6	635	25.5
Industrial Corporates	207	30.7	216	19.5	723	41.5	1,387	55.7
SEB's & Utilities	211	31.3	403	36.5	434	24.9	466	18.7
Total	674	100.0	1,104	100.0	1,744	100.0	2,488	100.0

Source: Company

**Industry wise revenue break up (%)**



Source: Company

Emphasizing on sale of dry type transformers where realizations and margins are better

**Technical tie up to build knowledge on designing transformers**

The company has tied up with two German companies M/s Mora Transformatoren GmbH, Usingen and M/s HOSCHPANNUNGSTECHNIK UND TRANSFORMATORBAU GMBH (HTT) for the manufacture of Vacuum Resin Impregnated Dry Type Transformers and Cast Resin Dry Type Transformers respectively. The technical tie up helped it to build its knowledge on designing transformers at optimal costs. The software gives complete mechanical and electrical design parameters, weights and sizes of all important raw materials, which helps in optimizing costs.

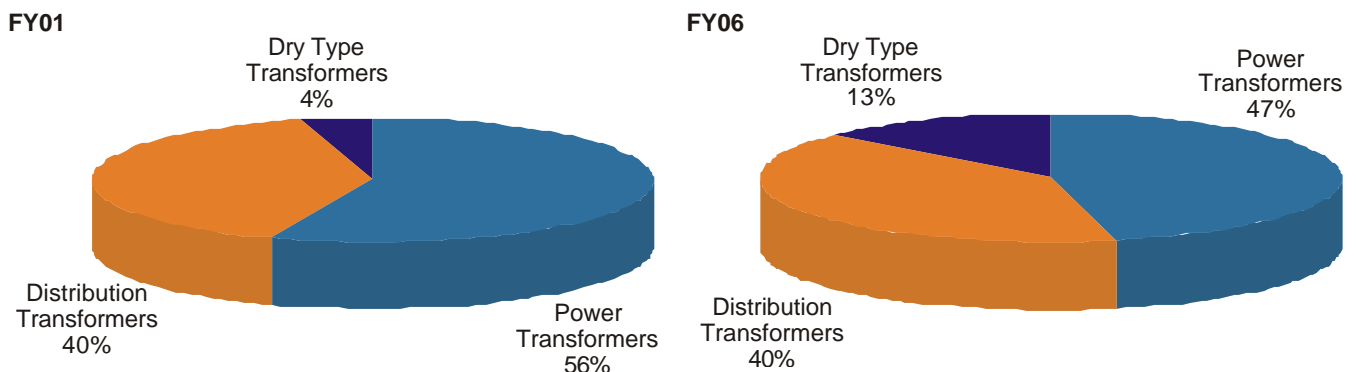
**De-risking by focusing on dry type transformers and export market**

VTL is amongst the renowned players in the distribution transformer space with a high brand recall. It has successfully levered its position into dry type transformers where realizations (usually up to 65—75% costlier than the conventional oil filled transformers) and margins are better than conventional oil filled transformers. It intends to maintain its existing revenue mix with majority coming from industrial and corporates (higher users of dry type transformers) and a lesser from SEBs. VTL has the highest market share of about 40-45% in dry type transformers. The company is also focusing on the export market. It is targeting high growth markets such as the Middle East, African and South East Asian countries where the power sector reforms are underway. Dry type transformers constituted about 4.3% share of total volume produced during FY01 to 13.3% during FY06. It is currently promoting its dry type transformers via seminars, thereby exposing itself to potential demand from both domestic and international markets.

**Growth drivers for dry type transformers**

- ✓ Rapid expansion of retail space in the country coupled with urbanization of tier II and tier III cities. Dry type transformers are preferred here as they do not catch fire easily as compared conventional oil filled transformers.
- ✓ Modernization of airports will also be a demand driver for dry type transformers.
- ✓ Huge capital expenditure being announced by various players in the metal, oil and gas, cement and other industries, totaling to Rs8.8tn.
- ✓ Growth in hospitality and real estate sector, which will be driven by robust growth in IT/ITES, will also boost demand for dry type transformers.
- ✓ All the above are due to more stringent norms of the government on safety related issues.

**Product contribution to topline**



Source: Company

ROCE and RONW of 43% and 33.1% during FY06 is amongst the best in the industry

### **Margins to expand by 54bps to 14.2% by FY09E**

The profitability of a transformer depends on the company's ability to source raw materials at the best possible price. VTL has in place a system of taking back-to-back commitments from suppliers of major raw materials and components for large projects. It books copper and other important raw materials in advance by forward booking on the LME in order to hedge its position. It outsources its requirement of transformer tanks to some players in the vicinity. The company's sale to the industrial segment where margins are better than SEBs contracts coupled with focus on dry type transformers and last minute contracts should help its margins to expand.

### **High return ratios – striking feature**

The company has been historically reporting an ROCE of ~43% which is mainly due to high asset turnover of about 3x and prudent financial management. Over the next two years this is only expected to improve supported by strong demand for transformers and low additions to assets by VTL. Due to low capital requirement for capacity addition, we believe internal accruals should be good enough to care of it. The company is expected to improve upon its ROCE over the next couple of years.

### **Valuations**

With orders expected to flow from the industrial side and a cushion being provided by its prequalification with SEBs encourages us to assume a 43.1% CAGR in its topline over FY06-09E. With better cost efficiencies and economies of scale, we expect margins to expand to 14.2% by FY09E. This translates into a bottomline growth of 44.1% CAGR over FY06-09E. At Rs703 the stock is trading at 13.6x and 10.3x FY08E and FY09E earnings of Rs51.5 and Rs68 respectively. We recommend a HOLD on the stock with a price target of Rs816, an upside of 16%.



## Company background

VTL caters to industrial clients from petrochemicals, oil refining, cement, paper and pulp, pharmaceuticals, automobiles, steel, power plant, construction, metro rail applications, mining and minerals. The company has a total installed capacity of 5,400MVA with a capability to manufacture up to 50MVA/132kV of power transformers.

### Milestones

Year	Milestone
1970	Commenced manufacture of transformers up to 10,000KVA, 66kV for utilities and industrial clients
1981	Commenced manufacture of 132kV class transformers
1986	Commenced manufacture of 50MVA, 132kV class power transformer
1998	Entered into technical license agreement with M/S Mora Transformatoren GmbH, Usingen, Germany for manufacture of Vacuum Resin Impregnated Dry Type Transformers and subsequently started manufacturing of the same
2000	Commenced manufacture of Induction Furnace Transformers
2002	Entered into a Technical License agreement with M/S HOCHSPANNUNGSTECHNIK UND TRANSFORMATORBAU GMBH, (HTT), Germany for manufacture of Cast Resin Dry Type Transformers and subsequently started manufacturing of the same
2005	Increased total capacity to 5,400MVA in FY06 from 3,000MVA in FY03
2006	Listed on BSE and NSE

Source: Company

### Management profile

Name	Designation
Mr Lalit H Patel	CMD
Mr Kunjal Patel	VC & Jt MD
Mr K S Patel	Jt MD and CEO
Mr A K Mathur	Head Strategic Purchase
Mr B M Sheth	Group General Manager (Design and Development)
Mr T A Francis	Sr. General Manger (Technical)
Dr P M Parikh	General Manager - Marketing
Mr P M Patel	General Manager - PT SBU
Mr G R Shah	General Manager - Design
Mr V N Madhani	Co Secretary

Source: Company

### Concerns

- ✓ Growth is dependent on the pace of industrial capex. In case of any slow down in the economy could result into a slow down in the capex too, which in turn could hamper our estimates.
- ✓ If the company is unable to undertake orders at competitive prices, imports from China and Russia could be a major threat, as industrial clients would switch to cheaper substitutes.
- ✓ Acquiring key raw materials at the right price is a very vital factor. The company does not have any long term contracts with suppliers of these key raw materials.
- ✓ In case if prices of key inputs i.e. copper, CRGO, transformer oil and steel, move suddenly and sharply and the company is unable to capture it, as most of its contracts are fixed price, its margins could be pressurized thereby affecting our estimates.
- ✓ The contracts that the company enters into with its customers are to be delivered within the scheduled time lines which if not complied to will result into material loss. As the company receives about 81.3% of its total revenues from EPC contractors and industrial clients, there is always a risk associated with the contracts. However it is placed comfortably as far as payment security is concerned.

## Financials

### Projected Income Statement

Period to (Rs mn)	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
Net Sales	1,100	1,744	2,488	3,872	5,614	7,298
Operating expenses	(949)	(1,511)	(2,149)	(3,329)	(4,823)	(6,263)
Operating profit	151	233	339	542	791	1,035
Other income	32	29	41	57	72	92
PBIDT	183	262	380	599	863	1,126
Interest	(6)	(8)	(11)	(11)	(24)	(27)
Depreciation	(11)	(16)	(19)	(21)	(36)	(41)
Profit before tax (PBT)	166	238	350	567	803	1,059
Tax	(67)	(91)	(123)	(199)	(281)	(371)
Profit after tax (PAT)	98	147	227	369	522	688
Extraordinary items	1	3	3	-	-	-
Adjusted profit after tax (APAT)	100	150	230	369	522	688

### Projected Balance Sheet

Period to (Rs mn)	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
<b>Sources</b>						
Share Capital	8	101	101	101	101	101
Reserves	322	369	593	950	1,458	2,128
Net Worth	329	470	695	1,052	1,559	2,229
Loan Funds	96	132	189	146	246	266
Def Tax liability	1	1	-	-	-	-
<b>Total</b>	<b>426</b>	<b>603</b>	<b>884</b>	<b>1,198</b>	<b>1,805</b>	<b>2,495</b>
<b>Uses</b>						
Gross Block	118	150	178	206	356	406
Accd Depreciation	(63)	(78)	(97)	(117)	(153)	(193)
Net Block	55	72	81	88	203	212
Capital WIP	-	2	4	7	2	2
Total Fixed Assets	55	74	85	95	205	214
Investments	1	1	1	1	1	1
Total Current Assets	548	700	1,126	1,716	2,211	2,922
Total Current Liabilities	(177)	(170)	(328)	(614)	(612)	(641)
Net Working Capital	370	529	798	1,102	1,599	2,280
Def Tax assets	-	-	1	-	-	-
<b>Total</b>	<b>426</b>	<b>603</b>	<b>884</b>	<b>1,198</b>	<b>1,805</b>	<b>2,495</b>

**Key Ratios**

Period to	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
<b>Per share ratios (Rs)</b>						
EPS	128.1	14.8	22.7	36.4	51.5	68.0
Div per share	10.0	0.8	0.5	1.0	1.3	1.5
Book value per share	423.2	46.5	68.7	103.9	154.1	220.3
<b>Valuation ratios (x)</b>						
P/E	13.0	47.5	30.9	19.3	13.6	10.3
P/BV	2.9	15.1	10.2	6.8	4.6	3.2
EV/sales	1.0	4.1	2.9	1.8	1.3	1.0
EV/EBIDTA	6.8	27.6	19.1	11.8	8.5	6.5
<b>Profitability ratios (%)</b>						
OPM	13.7	13.3	13.6	14.0	14.1	14.2
EBIDTA	16.6	15.0	15.3	15.5	15.4	15.4
PAT	9.1	8.6	9.2	9.5	9.3	9.4
ROCE	43.0	43.5	43.0	50.0	47.8	45.1
RONW	30.3	31.8	33.1	35.0	33.5	30.9
<b>Liquidity ratios</b>						
Current ratio	3.1	4.1	3.4	2.8	3.6	4.6
Debtors days	84.0	87.6	56.0	56.0	56.0	56.0
Inventory days	46.0	43.7	92.7	74.9	74.9	74.9
Creditors days	4.7	2.7	15.8	18.8	18.8	18.8
<b>Leverage ratios</b>						
Debt / Total equity	0.29	0.28	0.27	0.14	0.16	0.12
<b>Component ratios (as % of net sales)</b>						
Raw material	76.1	76.8	77.1	77.2	77.3	77.4
Admin & selling charges	2.4	2.1	2.1	2.0	2.0	2.0
Staff cost	2.8	3.0	2.7	2.4	2.4	2.4
Mnft. & Other expenditure	5.1	4.7	4.5	4.3	4.2	4.1
Total operating expenses	86.3	86.7	86.4	86.0	85.9	85.8

# Bharat Bijlee Ltd

## INITIATING COVERAGE

### Stock Data

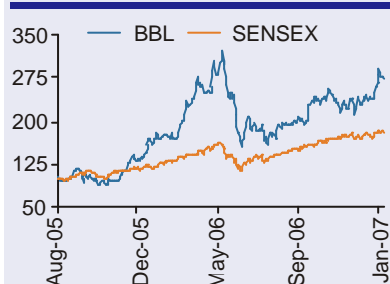
Target Price	Rs1,675
Upside	12.8%
Sensex	14,516
52 Week H/L	Rs1,619 / 998
Avg Volumes (6m)	15,888
Market Cap	Rs8.4bn
Face Value	Rs10
BSE Code	503960
NSE Code	BBL
Bloomberg	BIJL
Reuters	BBJL.BO

(Price as on 5th Feb '07)

### Share Holding Pattern

Dec'06	(%)
Promoters	35.4
Non Promoter Corp Holding	7.8
Institutions	24.5
Foreign	2.9
Public & Others	29.5

### Share Price Trend



### Transformers to contribute 71% of revenues

Huge investment announced by the government and industries provides Bharat Bijlee Ltd (BBL) an opportunity for its transformer division to witness rapid growth in the near future. BBL has a strong brand name with a high degree of repeat clients. In order to take advantage of this opportunity, BBL more than doubled its capacity to 8,000MVA from 3,800MVA. This will up the share of the division in total revenues to about 71% by FY08E from the present 53.9% in FY06.

### Expanding product profile by introducing higher frame motors

The company is undertaking fresh investments of about Rs200mn in setting up a manufacturing unit with a test field for large motors at its Kalwe facility. The motors division serves to original equipment manufacturers and industrial units, which is expected to witness huge demand from industrial capex and investments in water projects by the government.

### Sharper focus on core operations

Bharat Bijlee Ltd (BBL) divested its non-core elevators business during FY05, which makes it a focused player in the electrical equipment segment. The sale of this business realized Rs365mn to the company. This has helped it to sharpen its focus on core business, which will lead to improved bottomline.

### Investment portfolio guards against downside risk

The company has a strong investment portfolio, which is currently valued at Rs 2.1 bn. These are non-strategic holdings of the company, which are reflected in the books at Rs183mn. After considering 50% value of its investment portfolio, per share cash and cash equivalent stands at Rs182.

### Highest return ratios amongst peers

The company's ROCE and RONW during FY06 stood at 45.8% and 43.6% respectively. This is due to prudent financial management and high asset turnover in the past. Strong cash flows in future should help the company to maintain this going forward.

### Valuation

A shift in product mix, which will be driven by huge investment in the power sector, should enable BBL's topline to register a CAGR of 31.6% over FY06-09E. At Rs1,485 the stock is trading at 13.7x and 10.3x (adjusted for investments) FY08E and FY09E earnings of Rs94.7 and Rs124.4 respectively. We recommend a HOLD with a price target of Rs1,675, an upside of 12.8%.

### Key Financials

Period to	FY04	FY05	FY06	FY07P	FY08P	FY09P
(Rs Mn)	(12)	(12)	(12)	(12)	(12)	(12)
Net sales	2,043	2,458	3,008	4,193	5,344	6,854
% yoy	36.8	20.3	22.3	39.4	27.4	28.3
OPM (%)	8.2	11.2	17.0	16.5	16.5	16.5
APAT	73	278	337	425	535	703
% yoy	313.4	278.3	21.3	26.1	26.1	31.3
Equity	57	57	57	57	57	57
EPS (Rs)	13.0	49.1	59.6	75.1	94.7	124.4
EV/EBIDTA (x)	47.5	26.7	14.1	10.8	8.7	7.7
ROCE (%)	33.1	36.5	45.8	43.1	41.0	42.0
RONW (%)	24.2	53.1	43.6	38.6	35.1	33.5
P/E (x) (adjusted for investments)	99.3	25.7	21.7	17.2	13.7	10.3

More than doubled capacity to take advantage of upcoming demand

### Expanded transformer capacity to steer growth

BBL, one of the leading players in the transformer industry, recently more than doubled its capacity from 3,800MVA to 8,000MVA at a cost of Rs250mn. This new PWRLEX Transformer facility came on stream on March 22<sup>nd</sup> 2006. Its new Vapour Phase Drying System is fully operational, which marks the commissioning of the new facility. The expansion positions BBL to take advantage of the ongoing investments in the power sector by both public and private players. BBL's product range spans up to 160MVA and its upgradation efforts will enable it to serve the high-end power transformers market. The company has a significant presence in the distribution and power transformer up to 220kV, 50MVA for corporates and EPC contractors. BBL uses the German technology, which is updated from time to time based on field performances.

Its distribution transformer portfolio ranges from 500KVA to 5,000KVA up to 33kV while its power transformers ranges up to 160MVA/220kV. At the end of last year it had orders to manufacture nine units of 100MVA transformers of which only three were produced and one was dispatched. This means that the company will be executing and dispatching the remaining orders during the year.

### Product portfolio

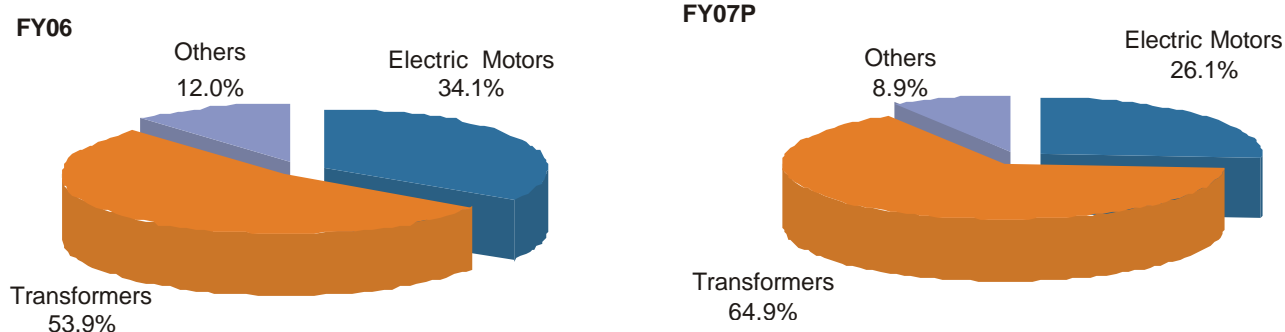
Product range	Range
Distribution transformer	500KVA – 5,000KVA/33kV
Power transformer	Up to 160MVA, up to 220kV
Special transformers	
Generator transformer	
Motor starting transformers	
Dry type transformers	
Thyristor duty transformers	
Locomotive transformers	

Source: Company

In the past BBL executed orders for TGCIL, HVPBL, UPPCL, SUZLON, MPSEB, PSEB, MSEB, RRVPNL, KPTCL, etc. With the upbeat in the sector, we expect BBL's transformers division to contribute about 64.9% for FY07 against 53.9% in FY06.

Client mix of SEBs and industrial with high repeat orders

### Revenue mix



Source: Company, India Infoline Research

Entry into higher frame motors to push segment growth to 8% CAGR over FY06-09E

### Focusing on higher frame motors

The company has in the past sold over 2mn motors and pumps to the Indian agriculture and industry segments. It uses computer and communications technology to integrate its marketing and distribution network through the implementation of BaaN ERP. BBL also markets single and three phase monobloc, centrifugal and submersible pumps for industry, agriculture and households. The Rs30bn motor industry is dominated by the unorganized segment in the lower end, i.e. less than 10hp, and by organized segment in the medium and higher end. BBL's energy efficient motors have been conferred with eff2 (improved efficiency) efficiency levels. These standards are set by IEEMA / CEMEP.

### Motors product range

Three phase ac induction motors	Special products	Pumps
Standard Squirrel Cage TEFC Motors	Torque Motors	Centrifugal Monoblock Pumps
Energy Efficient Motors	Low Vibration Motors	Vertical Submersible Pumps
Flame Proof Motors Ex (d)	Loco Auxiliary Motors	Regenerative Self Priming Pumps
Increased Safety Motors Ex (e)	Shock Grade Motors for Warships	Horizontal Monobloc Submersible Pumps
Non Sparking Motors Ex (n)	Multi Speed Motors	
Crane and Hoist Duty Motors	Sugar Centrifuge Motors	
TEFC Slip Ring Motors	Cane Unloader Motors	
Brake Motor		

Source: Company

The management has indicated fresh investments of up to Rs200mn for setting up a manufacturing facility with a test field for large motors at its Kalwe facility. The motors division caters to demand from original equipment manufacturers and industrial units.

### Clientele for motors division

End-users	OEMs	Consultants
BASF	ABB	Dalal Consultants
Bajaj Auto	Alfa Laval	Dharamsi Morarjee
Bokaro Steel	Atlas Copco	DCL
Gujarat Ambuja	Blue Star	EIL
GAIL	BHEL	Humphrey & Glasgow
GNFC	CLW	I C B Technomount
HOCL	ELECON	I R S
Indian Navy	Elgi	Kvearnur Gas
IOCL	Harish Textiles	L R S
IPCL	Hercules Hoist	M E C O N
Nirma	ION Exchange	M N Dastur
NOCIL	Kilron	PDIL
NPC	Kruup	TCE
NTPC	KSB Pumps	Toyo Engg
RSP	L & T	UHDE
Reliance	Mukund	
Singareni Collieries	Manugraph	
SPIC	New Allenbury Works	
TELCO	Paramount Pollution	
TISCO	Power Build	
Vishakhapatnam Steel	S M Energy	
	Sulzer Pumps	
	Thermax	
	Trumac	
	Wartsila Diesel	

Source: Company

Greater focus on core operations to enable growth going forward

Non strategic investments of Rs180 per share provides some cushioning

Shift in product mix to stabilize margins at 16.5%

### Divested non-core operations

BBL during FY06 divested its elevators business with effect from FY05 for a consideration of Rs365mn. The company received the committed amount by way of 24.7mn preference shares of Rs10 each and bonds, 990 Bond A and 660 Bond B of Rs50,000 each, aggregating to a sum of Rs330mn in FY05. The balance amount of Rs35mn was received during FY06. The elevators business had negative margins and being project driven working capital requirement was also high. This will now help the company to focus on its core operations of manufacturing transformers and electronic meters.

### Investments to provide cushioning

BBL has non-strategic investments in shares of companies like Siemens, HDFC, HDFC Bank, ICICI Bank, Hindustan Oil Exploration and Bank of India. Apart from this, it also has investments in 6.75% US64 bonds, Saraswat Bank and North Kanara GSB Co-op Bank Ltd. During FY06 it invested in NHB Capital Gains Bonds worth Rs155mn thereby taking the total investment value of the company to Rs183.5mn. The market value of these investments stands at Rs2.1bn. After considering 50% of the value of this portfolio, the company's per share cash and cash equivalent position stands at Rs180, limiting the downside in the stock.

### Investment portfolio

Investments	No of shares	Portfolio size (Rs mn)	Market value** (Rs mn)
<b>Quoted</b>			
<b>FY06</b>			
Siemens India Ltd*	1,412,580	21.5	1,679
HDFC Ltd	102,980	1.4	187
ICICI Bank Ltd	15,821	0.6	15
HOEC Ltd	150,000	2.3	14
HDFC Bank Ltd	500	0.0	1
Bank of India	5,400	0.2	1
6.75% US64 Bonds	24,398	2.4	2
<b>Total Quoted</b>		<b>28.4</b>	<b>1,900</b>
<b>Unquoted</b>			
Saraswat Co-op Bank Ltd	1,000	0.0	0
North Kanara GSB Co-op Bank Ltd	10,000	0.1	0
NHB Capital Gain Bonds	15,500	155.0	155
<b>Total Unquoted</b>		<b>155.1</b>	<b>155</b>
<b>Total Investments</b>		<b>183.5</b>	<b>2,055</b>
50% market value of investments			1,028
Equity Capital			57
<b>Value per share (Rs)</b>			<b>182</b>

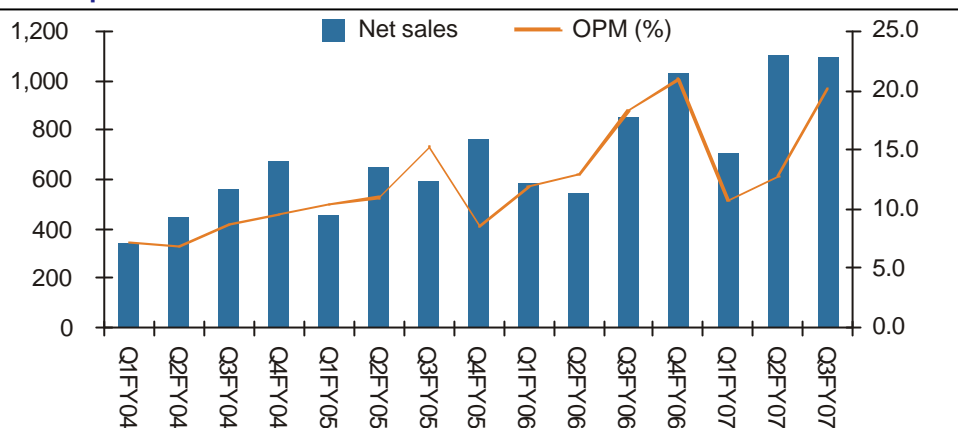
Source: Company

\*Post split \*\*Based on closing prices of 5th February 2007

### Margins to remain stable

With the company's focus shifting towards transformers, the segments share in the total revenues is expected to improve to 64.9% during the year. The company's client base for transformer consists of both SEB's and industrial, with SEB contracts having price variation clause, we expect margins to stabilize at 16.5%. Strategic outsourcing and improved product mix helped in improving margins during FY06 to 17% against 11.2% in FY05. Order inflow, production and despatches for the transformer business during FY06 were higher by 50%, 38% and 34% respectively over the corresponding period last year. The company had bookings for nine 100MVA transformers of which three were produced and only one was dispatched during FY06. The company's order book stood at Rs2.4bn as on May 2006.

### Revenue pattern



Source: Company

As indicated in the above chart it is seen that about 55-60% of annual revenues are recorded in the second half. This trend has been witnessed over the past 14 quarters. Further it has been doing about third of the whole years business in the last quarter. We expect this trend to continue going forward too.

### Quarterly performance

Period to	12/06	09/06	06/06	03/06	12/05	09/05	06/05	03/05
(Rs mn)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Net sales	1,098	1,102	710	1,031	854	541	583	765
Expenditure	(875)	(961)	(634)	(815)	(697)	(471)	(514)	(699)
Operating profit	222	141	76	216	157	70	69	66
Other income	6	8	8	16	5	9	7	20
Interest	(15)	(14)	(10)	(17)	(11)	(11)	(9)	(12)
Depreciation	(6)	(6)	(5)	(5)	(5)	(5)	(4)	(5)
PBT	206	129	69	210	146	64	64	68
Tax	(69)	(42)	(23)	(76)	(49)	(22)	(20)	(12)
PAT	137	87	46	135	97	42	44	56
Exceptional items	(4)	(4)	(4)	(4)	(4)	31	(4)	(47)
Adjusted PAT	134	84	43	131	93	73	40	9
OPM (%)	20	13	11	21	18	13	12	9
NPM (%)	12	8	6	13	11	14	7	1

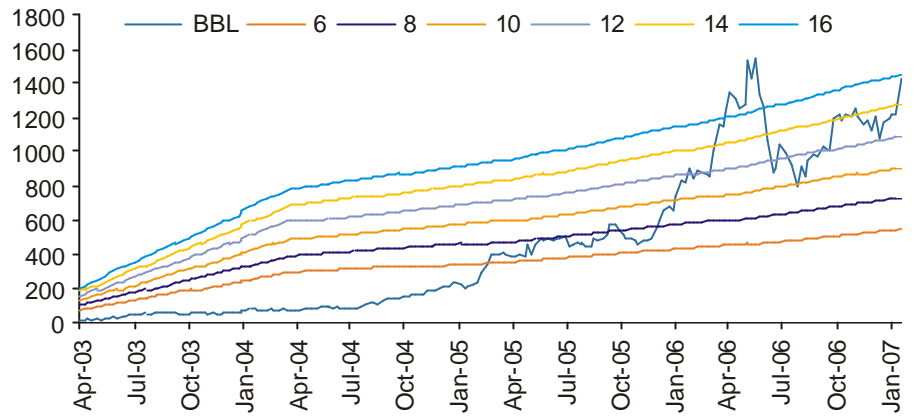
Source: Company

### Valuation

Keeping in view the robust outlook for the power sector coupled with commissioning of enhanced capacity, we expect the company's bottomline to witness a CAGR of 27.8% over FY06-09E. With the revenue mix expected to shift in favour of transformers and venture into higher frame motors, margins should stabilize at 16.5%. The company's low debt equity of 0.55 during FY06, which is expected to reduce further with improving cash flows, minimizes risk. This coupled with high ROCE and RONW of 45.8% and 43.6% respectively for FY06, which is amongst the best in the industry, speaks about the management prudence. The stock is currently trading at 15.7x and 11.9x FY08E and FY09E earnings of Rs94.7 and Rs124.4 respectively and EV/EBIDTA of 8.7x for FY08E. After adjusting for per share investment value of Rs182, the stock trades at 13.7x and 10.3x FY08E and FY09E earnings respectively. We recommend a HOLD on the company with a one year price target of Rs1,675, an upside of 12.8%.



P/E Band



Source: India Infoline Research

## Company background

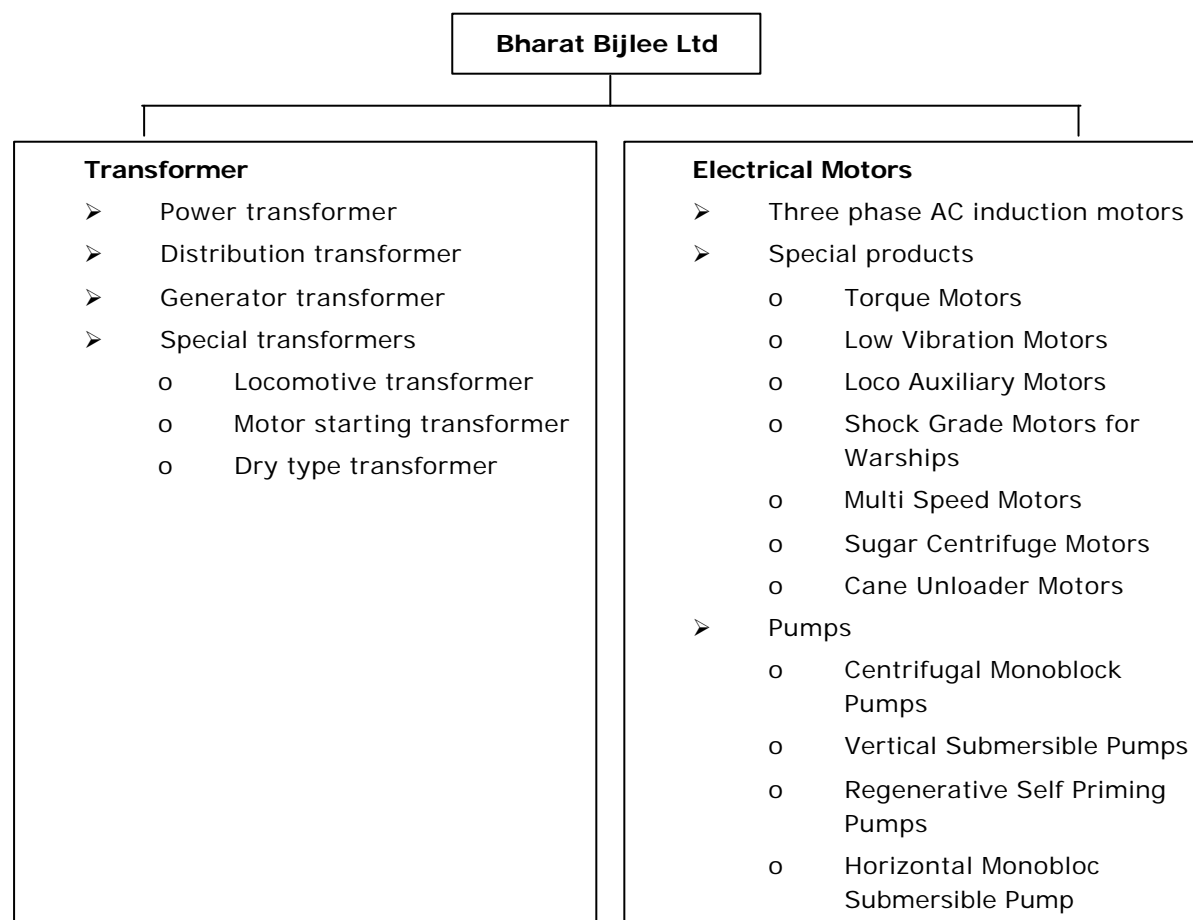
Bharat Bijlee Ltd, incorporated in 1946, today is one of the leading players in the motors and transformer industry. Its product profile consists of electronic motors, transformers and industrial electronics. BBL also undertakes turnkey projects.

### Milestones

Year	Milestones
1946	Incorporated
1947	Manufacture of motors
1954	Enters manufacturing of transformers
1958	Enters into a technical collaboration and distribution agreements with Siemens for motors and transformers
1966	Commences its Kalwe plant for manufacturing of motors and transformers
1968	Develops monoblock pumps for agriculture
1973	Installs first elevator under the brand name of Olympus
1977	Elevator business goes national
1980	Undertakes direct marketing of transformers from Siemens
1982	First 220kV transformer delivered
1982	Commencement of Projects division to undertake turnkey electrical projects
1986	Sells its millionth motor
1986	Forms a 10 year collaboration with Schindler for elevators
2003	Expands its transformer capacity
2005	Demerges its elevators division

Source: Company

## Business model



Source: Company, India Infoline Research

### Management profile

Name	Designation
Bansi S. Mehta	Chairman
Nikhil J. Danani	Vice Chairman & M.D.
Nakul P. Mehta	Vice Chairman & M.D.
Jaisingh R. Danani	Director
Mukul Harkisondass	Director
Prakash V. Mehta	Director
Anand J. Danani	Director
Deepak S. Parekh	Alternate Director
Sanjiv N. Shah	Director
Jairaj C. Thacker	Director
Meghendra Kumar	Director
D. N. Nagarkar	Company Secretary

Source: Capitaline

### Concerns

- ✓ The management is conservative and does not interact with the analyst fraternity. The estimates mentioned herein are solely based on our calculations and assumptions, which means that actual results could deviate from our estimates.
- ✓ The company manufactures transformers, the growth of which is dependent on the speed of reforms undertaken by the Government. Since this is a politically sensitive issue there could be a delay in implementation, resulting in subdued growth opportunity.
- ✓ There is low liquidity in the stock with average half yearly volumes being at.
- ✓ The company's long term wage agreement with the union expired on 31<sup>st</sup> December 2005, negotiations for another long term agreement with them were under way. No information on the same is available.
- ✓ The company caters to the industrial clients too, where contracts are fixed price. Any fluctuation in raw material prices and if the management is unable to capture the same, margins for the company could be under pressure, which in turn could hamper our bottomline estimates.
- ✓ In case the motors division degrows from here, actual performance could be different from our estimates.

## Financials

### Projected Income Statement

Period to (Rs mn)	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
Net Sales	2,043	2,458	3,008	4,193	5,344	6,854
Operating expenses	(1,875)	(2,184)	(2,496)	(3,501)	(4,461)	(5,721)
Operating profit	168	275	512	692	883	1,134
Other income	12	44	37	38	38	38
PBIDT	180	319	549	730	921	1,172
Interest	(41)	(38)	(47)	(66)	(80)	(77)
Depreciation	(13)	(17)	(18)	(26)	(36)	(38)
Profit before tax (PBT)	126	264	484	639	805	1,057
Tax	(37)	(78)	(166)	(214)	(270)	(354)
Profit after tax (PAT)	89	186	318	425	535	703
Extraordinary / prior period items	(16)	92	19	-	-	-
Adjusted profit after tax (APAT)	73	278	337	425	535	703

### Projected Balance Sheet

Period to (Rs mn)	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
<b>Sources</b>						
Share Capital	57	57	57	57	57	57
Reserves	247	467	716	1,044	1,467	2,041
Net Worth	303	523	773	1,101	1,524	2,098
Loan Funds	241	350	425	595	720	690
Def Tax liability	10	(1)	8	30	15	15
<b>Total</b>	<b>555</b>	<b>872</b>	<b>1,206</b>	<b>1,726</b>	<b>2,258</b>	<b>2,802</b>
<b>Uses</b>						
Gross Block	397	417	500	700	975	1,025
Accd Depreciation	(194)	(204)	(208)	(233)	(269)	(307)
Net Block	203	214	292	467	706	718
Capital WIP	1	12	2	5	5	5
Total Fixed Assets	203	225	294	472	711	723
Investments	28	28	183	183	183	183
Total Current Assets	1,251	1,520	1,805	2,296	2,870	3,722
Total Current Liabilities	(975)	(935)	(1,092)	(1,244)	(1,525)	(1,844)
Net Working Capital	276	585	713	1,052	1,345	1,877
Intangible Assets	1	3	1	1	1	1
Miscellaneous expenditure	46	30	14	17	17	17
<b>Total</b>	<b>555</b>	<b>872</b>	<b>1,206</b>	<b>1,726</b>	<b>2,258</b>	<b>2,802</b>

**Key Ratios**

Period to	FY04 (12)	FY05 (12)	FY06 (12)	FY07P (12)	FY08P (12)	FY09P (12)
<b>Per share ratios (Rs)</b>						
EPS	13.0	49.1	59.6	75.1	94.7	124.4
Div per share	4.0	9.0	13.5	15.0	17.5	20.0
Book value per share	53.7	92.6	136.8	194.8	269.6	371.2
<b>Valuation ratios (x)</b>						
P/E	114.3	30.2	24.9	19.8	15.7	11.9
P/E Post adj. of investments	99.3	25.7	21.7	17.2	13.7	10.3
P/BV	27.7	16.0	10.9	7.6	5.5	4.0
EV/sales	4.2	3.5	2.6	1.9	1.5	1.3
EV/EBIDTA	47.5	26.7	14.1	10.8	8.7	7.7
<b>Profitability ratios (%)</b>						
OPM	8.2	11.2	17.0	16.5	16.5	16.5
PAT	4.4	7.6	10.6	10.1	10.0	10.3
APAT	3.6	11.3	11.2	10.1	10.0	10.3
ROCE	33.1	36.5	45.8	43.1	41.0	42.0
RONW	24.2	53.1	43.6	38.6	35.1	33.5
<b>Liquidity ratios</b>						
Current ratio	1.3	1.6	1.7	1.8	1.9	2.0
Debtors days	119.6	101.0	118.5	114.0	113.0	113.0
Inventory days	76.0	52.2	52.2	49.2	49.2	49.2
Creditors days	85.4	40.5	39.8	40.0	40.0	40.0
<b>Leverage ratios</b>						
Debt / Total equity	0.79	0.67	0.55	0.54	0.47	0.33
<b>Component ratios (as % of net sales)</b>						
Raw material	62.1	67.1	65.5	67.1	67.2	67.3
Sub contracting charges	2.8	1.2	1.1	1.0	1.0	1.0
Staff cost	13.6	9.2	8.4	8.0	7.8	7.8
Mfg. & Other expenditure	13.3	11.3	8.0	7.4	7.4	7.4
Total operating expenses	91.8	88.8	83.0	83.5	83.5	83.5

**Annexure**

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**IEEMA Index calculations**

**Aluminum wound distribution transformers up to 10MVA, 33kv**

$$P = \frac{P_o}{100} \left[ 13 + 17 \frac{AL}{AL_o} + 33 \frac{ES}{ES_o} + 9 \frac{IS}{IS_o} + 5 \frac{IM}{IM_o} + 11 \frac{TB}{TB_o} + 12 \frac{W}{W_o} \right]$$

**Copper wound distribution transformers up to 10MVA, 33kv**

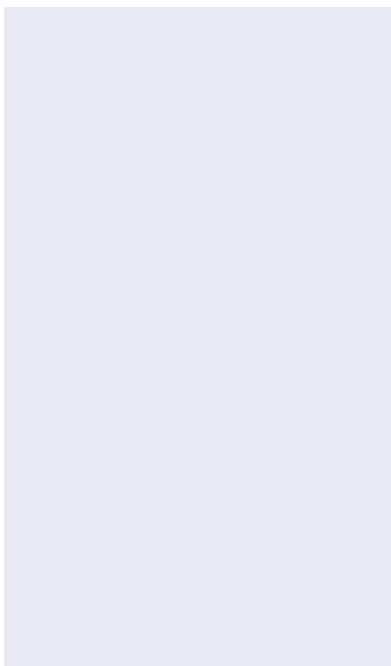
$$P = \frac{P_o}{100} \left[ 13 + 23 \frac{C}{C_o} + 27 \frac{ES}{ES_o} + 9 \frac{IS}{IS_o} + 5 \frac{IM}{IM_o} + 11 \frac{TB}{TB_o} + 12 \frac{W}{W_o} \right]$$

**Dry type transformers up to 10MVA, 33kv**

$$P = \frac{P_o}{100} \left[ 13 + 25 \frac{C}{C_o} + 20 \frac{ES}{ES_o} + 6 \frac{IS}{IS_o} + 14 \frac{IM}{IM_o} + 10 \frac{ER}{ER_o} + 12 \frac{W}{W_o} \right]$$

**Copper wound power transformers above 10MVA, 33kv**

$$P = \frac{P_o}{100} \left[ 13 + 23 \frac{C}{C_o} + 28 \frac{ES}{ES_o} + 7 \frac{IS}{IS_o} + 7 \frac{IM}{IM_o} + 7 \frac{TB}{TB_o} + 15 \frac{W}{W_o} \right]$$



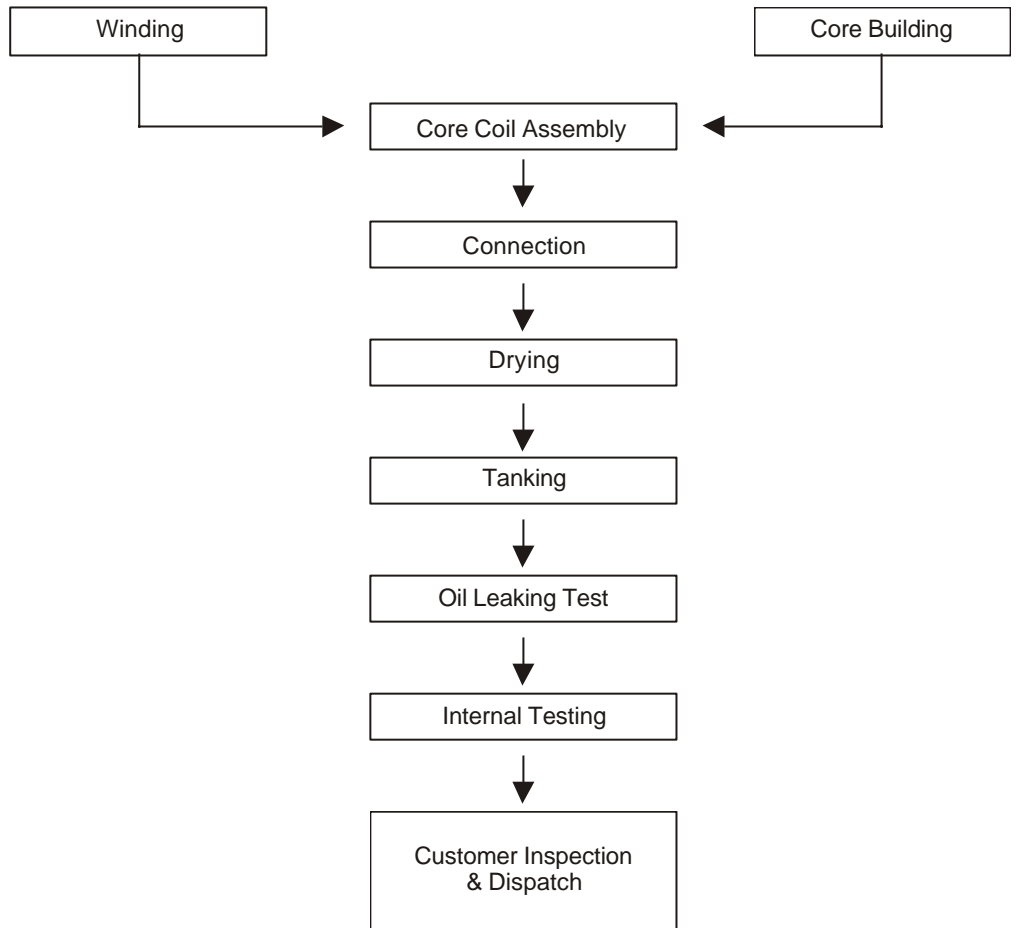


Formula details

Aluminum wound		Copper wound					
Tendering	Delivery	Tendering			Delivery		
Oil filled distribution transformer		Oil filled distribution transformer	Oil filled power transformer	Dry type distribution transformer	Oil filled distribution transformer	Oil filled power transformer	Dry type distribution transformer
Up to 10MVA, 33kv		Up to 10MVA, 33kv	Above 10MVA, 33kv	Up to 10MVA, 33kv	Up to 10MVA, 33kv	Above 10MVA, 33kv	Up to 10MVA, 33kv
<ul style="list-style-type: none"> <li>▪ <math>P_o</math> = Price quoted / confirmed</li> </ul>	<ul style="list-style-type: none"> <li>▪ AL = Aluminum rod, price as on 1<sup>st</sup> working day of the month prior to the date of delivery</li> </ul>	<ul style="list-style-type: none"> <li>▪ <math>P_o</math> = Price quoted / confirmed</li> </ul>			<ul style="list-style-type: none"> <li>▪ C = Avg. LME price of copper wire bars, price as on two months prior to the date of tendering</li> </ul>		<ul style="list-style-type: none"> <li>▪ C = Avg. LME price of copper wire bars, price as on two months prior to the date of tendering</li> </ul>
<ul style="list-style-type: none"> <li>▪ <math>AL_o</math> = Aluminum rod, price as on 1<sup>st</sup> working day of the month prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ ES = C&amp;F price of CRGO electrical steel sheets, 1<sup>st</sup> working day of the month prior to the date of delivery</li> </ul>	<ul style="list-style-type: none"> <li>▪ <math>C_o</math> = Avg. LME settlement price of copper wire bars, price applicable for the month, two months prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ <math>C_o</math> = Avg. LME settlement price of copper wire bars, price applicable for the month, two months prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ ES = C&amp;F price of CRGO electrical steel sheets, 1<sup>st</sup> working day of the month prior to the date of delivery</li> </ul>	<ul style="list-style-type: none"> <li>▪ ES = C&amp;F price of CRGO electrical steel sheets, 1<sup>st</sup> working day of the month prior to the date of delivery</li> </ul>		
<ul style="list-style-type: none"> <li>▪ <math>ES_o</math> = C&amp;F price of CRGO electrical steel sheets, 1<sup>st</sup> working day of the month prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ IS = WPI number for iron and steel (base: 1993-94 = 100), for the week ending 1<sup>st</sup> Saturday of the month, three months prior to the date of delivery</li> </ul>	<ul style="list-style-type: none"> <li>▪ <math>ES_o</math> = C&amp;F price of CRGO electrical steel sheets, 1<sup>st</sup> working day of the month prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ <math>ES_o</math> = C&amp;F price of CRGO electrical steel sheets, 1<sup>st</sup> working day of the month prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ IS = WPI number for iron and steel (base: 1993-94 = 100), for the week ending 1<sup>st</sup> Saturday of the month, three months prior to the date of delivery</li> </ul>	<ul style="list-style-type: none"> <li>▪ IS = WPI number for iron and steel (base: 1993-94 = 100), for the week ending 1<sup>st</sup> Saturday of the month, three months prior to the date of delivery</li> </ul>		
<ul style="list-style-type: none"> <li>▪ <math>IS_o</math> = WPI number for iron and steel (base: 1993-94 = 100), for the week ending 1<sup>st</sup> Saturday of the month, three months prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ IM = Price of insulating material, on 1<sup>st</sup> working day of the month prior to the date of delivery</li> </ul>	<ul style="list-style-type: none"> <li>▪ <math>IS_o</math> = WPI number for iron and steel (base: 1993-94 = 100), for the week ending 1<sup>st</sup> Saturday of the month, three months prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ <math>IS_o</math> = WPI number for iron and steel (base: 1993-94 = 100), for the week ending 1<sup>st</sup> Saturday of the month, three months prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ IM = Price of insulating material, on 1<sup>st</sup> working day of the month prior to the date of delivery</li> </ul>	<ul style="list-style-type: none"> <li>▪ IM = Price of insulating material, on 1<sup>st</sup> working day of the month prior to the date of delivery</li> </ul>		
<ul style="list-style-type: none"> <li>▪ <math>IM_o</math> = Price of insulating material, on 1<sup>st</sup> working day of the month prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ TB = Price of transformer oil base stock as on 1<sup>st</sup> working day, two months prior to the date of delivery</li> </ul>	<ul style="list-style-type: none"> <li>▪ <math>IM_o</math> = Price of insulating material, on 1<sup>st</sup> working day of the month prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ <math>IM_o</math> = Price of insulating material, on 1<sup>st</sup> working day of the month prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ TB = Price of transformer oil base stock as on 1<sup>st</sup> working day, two months prior to the date of delivery</li> </ul>	<ul style="list-style-type: none"> <li>▪ ER = Price of epoxy resin as on 1<sup>st</sup> working day, one month prior to the date of delivery</li> </ul>		
<ul style="list-style-type: none"> <li>▪ <math>TB_o</math> = Price of transformer oil base stock as on 1<sup>st</sup> working day, two months prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ W = All India average consumer price index number for industrial workers (base 1982 = 100), index as on 1<sup>st</sup> working day of the month, three months prior to the date of delivery</li> </ul>	<ul style="list-style-type: none"> <li>▪ <math>TB_o</math> = Price of transformer oil base stock as on 1<sup>st</sup> working day, two months prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ <math>ER_o</math> = Price of epoxy resin as on 1<sup>st</sup> working day, one month prior to the date of tendering</li> </ul>	<ul style="list-style-type: none"> <li>▪ W = All India average consumer price index number for industrial workers (base 1982 = 100), index as on 1<sup>st</sup> working day of the month, three months prior to the date of delivery</li> </ul>	<ul style="list-style-type: none"> <li>▪ W = All India average consumer price index number for industrial workers (base 1982 = 100), index as on 1<sup>st</sup> working day of the month, three months prior to the date of delivery</li> </ul>		

Source: Indian Electrical and Electronics Manufacturers' Association

**Manufacturing process**



Source: Industry





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