Emkay Research

Transformer Sector

Powered Transformation

- **Transformer industry to witness demand driven growth from generation, transmission and distribution segments**
- **Transformer demand estimated at 170,000MVA, higher than the estimated supply of 128,750MVA**
- **Industry largely immune to raw material price fluctuations**
- **High revenue growth coupled with earnings visibilty**
- **Valuations continue to be attractive**

Reco	Company	CMP (Rs)	TP (Rs)
BUY	Bharat Bijlee	2,128	2,806
BUY	EMCO	779	1,076
BUY	Indo Tech Transformers	393	508

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Powered Transformation

The transformer industry is all set for a strong innings ahead on the back of increased thrust on power projects and a massive Rs8,379 bn estimated outlay in the 11th five year plan as against Rs3,998 bn during the 10th five year plan. With transformers being used in all the main stages of a power project- namely generation, transmission & distribution, we expect them to be one of the key beneficiaries of the focus on power. We believe that the companies under our coverage - Bharat Bijlee, EMCO and Indo Tech Transformers would have a revenue growth of 45% vis-à-vis 20%-25% anticipated industry growth over FY07-09E. Strong demand led growth and higher capacity additions would enable these companies to outperform the industry. Insulation from raw material price vagaries and distribution of fixed costs over larger volumes are likely to improve their aggregate EBITDA margins from 14.3% in FY06 to 16.6% in FY07 and further to 17.1% in FY09E. All the companies under our coverage trade at 8x-10x FY09E earnings (a 20%-50% discount to their fair values), thereby leaving considerable room for upside from these levels. We initiate our coverage on this industry with a positive view and a BUY rating on all the companies covered with Bharat Bijlee being our top pick, followed by Indo Tech Transformers and EMCO respectively.

Transformer industry to witness demand driven growth

Increased thrust on power projects has seen a steady increase in demand for transformers. The transformer production in India has grown at a 15.4% CAGR in volume over the past five years. Going forward, we expect a greater demand for transformers on account of increased outlay for power projects in the 11th five year plan. We expect the average annual demand for transformers to be around 170,000MVA each year. This demand would come from the increased capacities in the generation segment and significantly higher investments in the transmission and distribution segments, including rural electrification. We believe that the current production and capacity expansion trends in the transformer industry would be unable to match the demand requirements. We estimate supply of transformers to be only 128,750MVA.This demand-supply mismatch is likely to ensure good growth in revenues for the companies under our coverage. We expect the companies under our coverage to grow at a 45% CAGR in revenues and 47% CAGR in profits over FY07-09E.

All segments of power sector to drive demand for transformers

The 11th five year plan (2007-12) has made substantial outlay for power sector as a whole - with increased focus on all facets of the power sector. With the transformers being used in all the main stages of a power project- namely generation, transmission & distribution, we expect them to be one of the key beneficiaries of the focus on power. We expect all segments of the power sector - generation, transmission and distribution- to drive demand for transformers.

Generation - The 11th five year plan (2007-12) announced recently, envisages to increase India's power generation capacity by a huge 78,577MW, which is about 50% of the present installed base. The estimated cost of this increase in generation capacity is Rs4,109 bn. Of this outlay, we expect transformers to constitute Rs82bn.

Transmission - During the same period (2007-12), the inter-regional transmission capacity would be increased from 14,100MW to 37,700MW. The cost of strengthening this transmission network capacity is pegged at Rs750 bn. The planned investments for strengthening the intra-state transmission network is likely to be Rs650 bn. Of the total outlay of Rs1,400 bn for transmission, we expect Rs205 bn to be spent on the transformer industry.

Distribution (including rural electrification) - The government is committed to provide reliable electricity supply to everyone by 2012 under its Common Minimum Programme (CMP). To ensure that this objective is achieved, the government is increasing the outlay for both - strengthening the distribution network and the RGGVY scheme. The total outlay in these two areas is pegged at Rs2,870 bn. Of this outlay, Rs574 bn is estimated to be spent on transformers.

Thus, increased spends on all facets of the power sector - generation, transmission and distribution are likely to drive demand for transformers.

Industry largely insulated from raw material price flux

A unique characteristic of the transformer industry is that it is largely insulated from raw material price fluctuations. Majority of sales of transformer companies are to state owned corporations, which award contracts on a tender basis. The companies in their tenders have built in price variation clauses- wherein any increase in raw material cost is borne by the customer. Hence, any change in raw material prices (especially copper and lamination) does not affect the margins of the transformer companies. It is for this that the high volatility in copper prices over the past two years has not affected the margins of most transformer companies.

The transformer sales' prices are benchmarked to the IEEMA index, which factors in the variations in the prices and wage levels from the time the order is placed to the time the transformer is delivered. Thus, the variations in prices get effectively passed on without the companies needing to hedge their positions and worry about losing margins.

Pre-qualification requirements restrict number of players

The major customer for most transformer companies are the state owned corporations, who invite tenders to award contracts to the companies. However, the state owned corporations lay down certain pre-qualifications which have to be met in order to bid for a contract. Typically, the pre-qualification requirements include specified number of prior installations, specific duration for which the installed transformers are under operation and prior track record of timely delivery. These pre-qualifications effectively ensure that the number of players in this space are more or less limited to the existing players who have adequate pre-qualifications as well as the financial strength to submit the performance guarantees as required by the buyers.

Growth in volumes, realisations and margins

Volumes of the transformer manufacturers are likely to increase on account of the robust demand scenario in the country, while realisations could improve due to the expected demand supply gap in the transformer industry. Even with all the major players expanding operations and increasing capacities, the anticipated shortage in transformers is expected to benefit all the players in the industry. Moreover, with the tendering process protecting the transformer companies from raw material price vagaries, margins are likely to be maintained. The transformer companies under our coverage have increased capacity at their existing facilities, thereby ensuring better economies of scale. As a result of this overall growth (volumes, realisations and margins), the transformer companies under our coverage are likely to outperform the industry.

We estimate that the combined sales of Emkay's universe of companies would increase from Rs12,814 mn in FY07 to Rs27,006 mn in FY09E, a CAGR of 45% over the next two years. We estimate that the EBITDA margins of the companies under Emkay's coverage would improve from 14.3% in FY06 to 16.6% in FY07 to 17.1% by FY09E, on the back of higher operating leverage and efficiencies.

We are bullish on the transformer industry on account of the high visibility in the planned capital expenditure in the power sector and the urgency shown by the government in implementing reforms in this sector so as to ensure that the economic growth of the country is not adversely affected.

Valuation

While we are bullish on the transformer industry as a whole, we have initiated coverage on Bharat Bijlee, EMCO and Indo Tech Transformers among other transformer companies. We believe that these companies will be major beneficiaries of the current uptrend in the transformer industry on account of the following reasons -

- Higher growth in revenues on account of more demand and increased capacity - The companies under our coverage have identified the strong growth potential of the transformer industry in the near future and have expanded capacity ahead of the increase in transformer demand. As a result, as the demand for transformers increases, they are likely to have increased capacity to cater to the demand. This is likely to result in huge volume growth and subsequently higher revenues.

- Healthier margins on account of economies of scale - The companies under our coverage have increased capacities at their existing facilities enabling them to enjoy economies of scale. Insulation from raw material price vagaries combined with operating leverage are likely to ensure better margins.

Bharat Bijlee, EMCO and Indo Tech Transformers quote at 21.3x, 37.2x and 16.4x their FY07 earnings respectively. The other players in the power equipment segment like Areva T&D, Crompton Greaves and Voltamp Transformers trade at 48.8x, 25.3x and 19.3x its FY07 earnings respectively. Bharat Bijlee and EMCO trade at multiples higher than Indo Tech Transformers or Voltamp Transformers as both these companies derive around 25% of its income from segments other than transformers.

We believe that the companies under our coverage will outperform the industry on account of the above mentioned reasons and therefore deserve higher valuations. All the companies under our coverage trade at 8x-10x FY09E earnings (a 20%-50% discount to their fair values), thereby leaving considerable room for upside from these levels. We initiate our coverage on this industry with a positive view and a BUY rating on all the companies covered with Bharat Bijlee being our top pick, followed by Indo Tech Transformers and EMCO respectively.

	CMP	TP	Rec	EPS (Rs)			EV / EDBITA (x)	RoCE (%)			P / E (x)		
	(Rs)	(Rs)		FY07	FY08E	FY09E	FY09E	FY07E	FY08E	FY09E	FY07	FY08E	FY09E
BBL	2,128	2,806	BUY	100.0	145.9	209.2	6.4	68.4	74.3	72.7	21.3	14.6	10.2
EMCO	779	1,076	BUY	37.4	66.7	85.1	5.2	9.7	15.3	14.5	37.2	11.7	9.2
ITTL	393	508	BUY	23.9	29.4	42.3	5.3	29.9	28.1	30.5	16.4	13.3	9.3

Investment Rationale

Transformer industry to witness demand driven growth

We expect the Indian transformer industry to grow at 20%-25% CAGR over the next five years. This growth would be achieved on the back of increased investments in all facets of the power sector value chain that is generation, transmission and distribution.

Rs861 bn market potential for transformers...

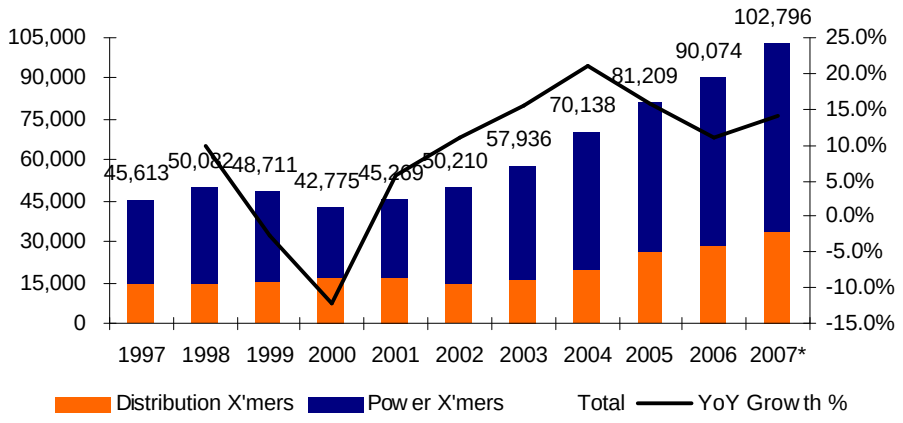
With an estimated investment of around Rs8,400 bn (USD200 bn) over the next five years in power generation, transmission as well as distribution up gradation, the Indian transformer market would see investments of almost Rs861 bn, approximately 10% of the estimated investment. While about 2% of generation project cost is spent on transformers, it increases substantially to around 15% in case of transmission projects and 20% for distribution and rural electrification projects.

Transformer production on a steady uptrend

With the increased spend on power generation, transmission and distribution; the transformer industry too, has seen a proportionate increase in demand. The transformer production in India has witnessed continuous growth with a 15.4% CAGR volume growth in the past five years.

Industry volume growth expected to be higher than the past 15.4% CAGR

Transformer Production Trend in India (MVA)



source: IEEMA: upto December 2007*

We believe that the growth in the next five years would be significantly higher as the government pushes for faster generation capacity additions and strengthening of the transmission and distribution network to ensure that India's growth is not hampered and its 'Power for All by 2012' is met. We expect the revenues of the transformer companies under our coverage to grow at a CAGR of 45% over the next two years. This would be achieved on the back of improved realisations and higher capacity utilisations, even on the expanded capacities.

We believe that this growth in production is lagging behind demand growth on account of the lower production capacity base in the country and the higher demand due to the focus on increasing power transformation requirements.

Estimated annual demand for transformers at 170,000MVA

We expect the annual demand for all classes of transformers to be around 170,000MVA, much higher than the estimated 128,750MVA capacity of the entire transformer industry in India.

Industry demand to be around 170,000MVA annually

Estimated Demand for Transformers (next five years)

	Unit	Total	XI five year plan	UMPPs
Period of Implementation			5 years	10 years
Planned Generating Capacity	MW	110,577	78,577	32,000
Expected Achievement	%	NA	80%	NA
	MW	67,900	62,900	5,000
Transformer Requirement	MVA per MW	NA	7	7
	Total MVA	NA	440,300	35,000
Annual Requirement (Rounded)	MVA	100,000	90,000	10,000
				In FY10-12E
Replacement Demand	MVA	20,000		
Demand from New Initiatives	MVA	50,000		
Total Demand	MVA	170,000		

Source: MoP, Emkay Research

Transformers are required in all the major facets of any power project- namely generation, transmission and distribution. The annual industry demand for transformers has been arrived at - taking into account the requirement of transformers in generation, transmission and distribution of power. The following points indicate the assumptions on which the demand has been arrived at

1. We have not considered the demand from the 16,000MW generation capacity spill-over from the 10th five year plan, as we have conservatively assumed that all the equipment required has already been ordered and hence, would be reflected in the order books of the transformer companies.

2. Our assumptions include 80% (62,900MW) achievement of generation capacity addition in the 11th five year plan and 100% achievement of the planned Ultra Mega Power Projects (UMPPs). However, by FY12 only 5,000MW of the UMPPs capacities would have commenced commercial operations. We expect that all the UMPPs would be implemented over a 10 year period.

3. In the transmission segment, the key demand drivers are the national transmission grid, also called the national grid and the strengthening and upgradation of all the five regional grids. The national grid's capacity is envisaged at 37,700MW by the end of FY12, which is over 2.5 times the present capacity of 14,100MW. In addition, major portions of the regional grids would require strengthening and upgradation to ensure that the investments in the national grid bear fruit. We estimate that the investment required in expanding the national grid would be Rs750 bn and that for the intra-state grid strengthening would be another Rs650 bn, or Rs1,400 bn together. We estimate that of this budgeted expenditure, Rs205 bn would be for transformers.

4. The last leg of the power sector chain, namely distribution, is seeing investments in the form of the APDRP (Accelerated Power Development Reforms Program) and RGGVY (Rajiv Gandhi Grameen Vidyutikiran Yojana) programmes. The annual planned outlays for these projects too, have been increased in the recently announced budget. The APDRP project has been allocated Rs80 bn in 2007-08 as against Rs65 bn in 2006-07. For the RGGVY programme, the union budget has provided Rs39.83 bn for 2007-08 as against Rs30.00 bn in 2006-07. We expect Rs23.97 bn or 20% of the planned expenditure to be spent on transformers.

We have thus estimated an annual requirement of 170,000MVA of transformer capacity over the next five years. The estimated replacement demand of 20,000MVA each year is based on an estimated transformer life of 30 years, which, though on the higher side, is more practical given the present constraints of the power sector. If the transformers were to be replaced at the end of their rated life, the replacement demand could be around 25,000MVA-30,000MVA per annum, further accentuating the demand-supply gap. We estimate all these factors to drive growth in the transformer industry over the next five years.

Transformer supply estimated at 128,750MVA

Transformer supply estimated at 128,750MVA

The lagging supply scenario

The total transformer manufacturing capacity in India is estimated to be around 128,750MVA, of which the organised players account for a majority of the industry capacity. The small and marginal unorganised players are present only in the distribution transformer segment which caters to regional demands.

Increasing the number of operational shifts is the first step that all the players resort to meet the increased demand. Most of the players have already crossed this stage and are implementing the next logical step of capacity expansion though greenfield plants. Such production expansion at existing facilities typically takes six months to a year.

The details of the existing transformer production capacity along with planned capacity expansions are as under:

Transformer Manufacturing Capacity

Company	Capacity (MVA)			Remarks
	Existing	Expansion	Total	
ABB	10,000		10,000	
Areva T&D	8,500		8,500	
Bharat Bijlee	8,000	3,000	11,000	Expansion at existing location in FY09E
BHEL	12,000	4,000	16,000	Likely to be further expanded to 20,000MVA
Crompton Greaves#	23,400	7,000	30,400	
EMCO	15,000	5,000	20,000	Expansion likely to be completed by July 2007
Indo Tech Transformers	3,450	4,000	7,450	Expansion to be complete in Oct 2007
Voltamp Transformers	5,400		5,400	
Total Organised Segment	85,750	23,000	108,750	
Unorganised players	20,000	NA	20,000	
Total Industry Capacity	105,750	23,000	128,750	

Source: Companies, Industry, Emkay Research
#: includes reactors

Demand Supply gap to ensure better realisations

Demand to grow faster than supply … leading to a continued shortfall

Given the demand of 170,000MVA per annum as against the production capacity of only around 128,750MVA, we believe that the gap would be difficult to bridge except through import or postponing replacements of existing transformers.

We expect that even with increase in capacities of most of the organised players, the demand supply gap would continue over the next few years. We believe that this would give the players additional pricing power and hence ensure that the margins of the players are maintained.

During the past 3 years, the realisations from transformer sales have substantially improved for Bharat Bijlee, EMCO and Indo Tech Transformers. The realisations have witnessed a 3 year (FY04 to FY07E) CAGR growth of 19% for Bharat Bijlee, and 26% each for EMCO and Indo Tech Transformers. On an annual basis, the realisations in FY07E have increased 20%, 34% and 33% for Bharat Bijlee, EMCO and Indo Tech Transformers respectively. We have conservatively estimated a 15% CAGR realisation growth for Bharat Bijlee as its present realisations are lower compared to its peers. We have estimated a no-growth in realisations for EMCO and a 10% reduction in realisations for Indo Tech Transformers. In the case of Indo Tech Transformers, the realisations for FY07 were higher on account of a few high value orders which are unlikely to be repeated, and hence the reduction in realisations is assumed.

Key demand drivers for transformers

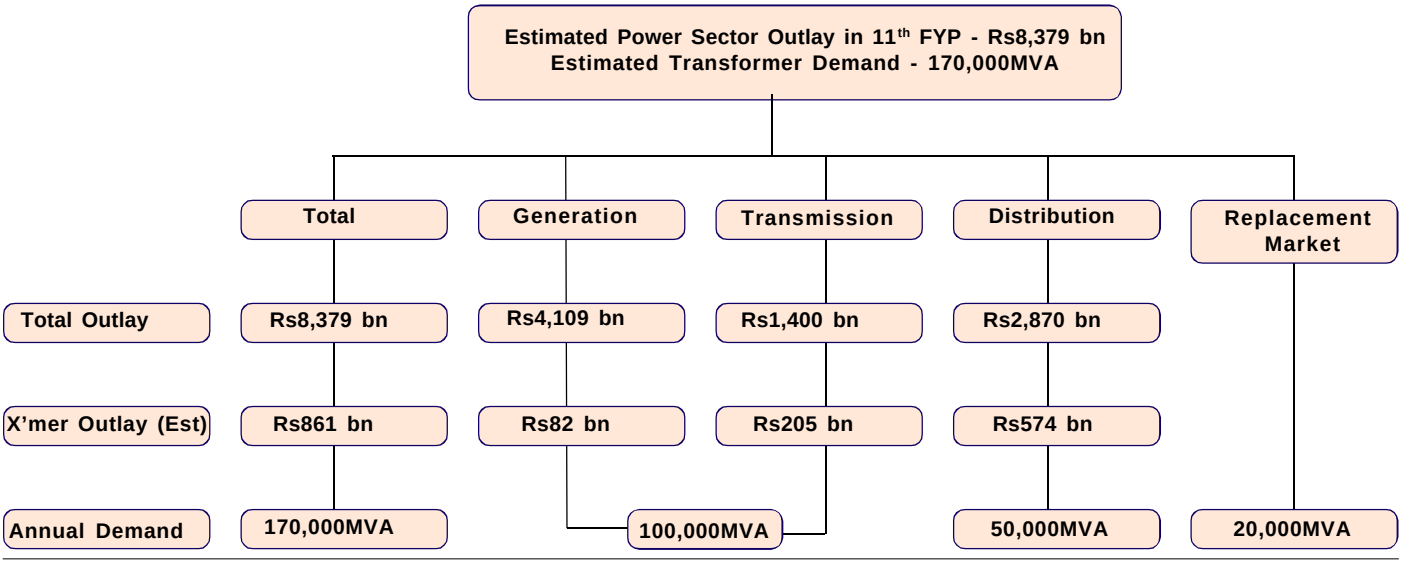
High demand from all the segments of the power sector: generation, transmission, distribution & rural electrification

The key demand drivers for the growth in the transformer industry would be driven by the increased focus on adding generation capacity, strengthening the transmission network and ensuring that each village in the country is provided with electricity.

We estimate that the generation capacity addition would be to the tune of 67,900MW in the next five years. This includes 5,000MW of the UMPP's capacity which would be commissioned in phases.

On the transmission front, PGCIL is implementing the 37,700MW national transmission grid project and the inter-state transmission networks.

The distribution segment is likely to witness growth from the APDRP and RGGVY schemes which intend to strengthen and expand the distribution network in India. These schemes have been allocated Rs119.83 bn in 2007-08 union budget, up 26% from the Rs95.00 bn allocation for 2006-07.



Source: CEA, Ministry of Power, Emkay Research

Notes: (1) Outlay and estimated outlay on transformers is for a 5 year period; (2) MVA Demand is annualised

Power Generation expansion

The 10th five year plan has added only 50% of its original targeted capacity addition of 41,110 MW, which is one of the highest achievements since the power sector reforms began. Historically, India has never achieved its planned power capacity additions. However, we believe that in the present scenario, past performance should not be taken as a benchmark. We expect that in the next decade, India could be able to achieve much higher generation capacity additions on account of the prevailing high power shortages in the country and its consequent effects on India's economic growth.

We believe this scenario could change in the future on account of the increased focus on the power sector as a key support for industry and GDP growth and on account of the high power shortages in the range of 12%-13% of peak power requirements and 8%-9% of base load requirements.

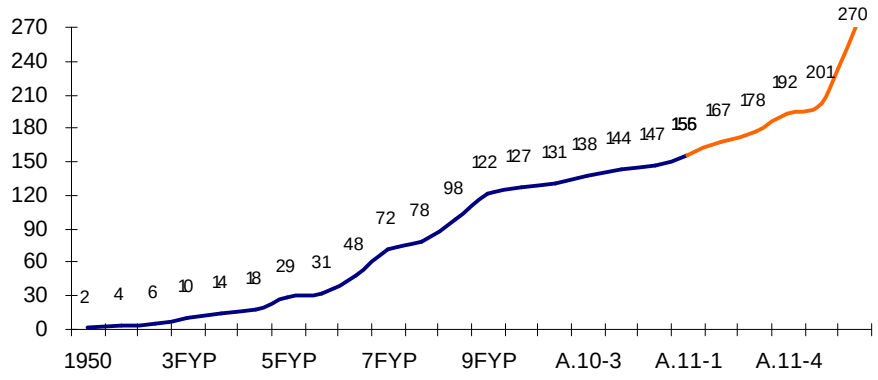
Rs4,109 bn to be spent on generation capacity addition

We estimate that the total investments in the power generation sector would be around Rs4,109 bn. These investments would be spread over the next 5 years in the 11th five year plan. In addition, we estimate that Rs680 bn to Rs700 bn would be spent to implement the 8,000MW of the four Ultra Mega Power Projects (UMPPs).

7MVA per MW

These investments present huge opportunity to transformer players as each incremental MW of power generation capacity requires 7MVA of transformation capacity.

Generation Capacities ('000 MW)



source: CEA, MoP; Emkay Research

Transmission Network Upgradation

The Indian transmission network is classified into national transmission grid, regional grids, a sub-transmission network, and the primary transmission network.

Transformer Use and Key Players

Transmission Type	Class of Transformers
Primary Transmission	11 / 22 / 33 kV
Sub-Transmission	33 / 66 / 110 / 132 kV
Regional Transmission	132 / 220 / 400 kV
National Transmission Grid	400 / 765 / 800 kV

source: Industry

The expansion of the national transmission grid

Rs1,400 bn earmarked for grid strengthening projects

The National Transmission Grid connects all the five regions namely the Eastern, North-Eastern, Northern, Southern and Western regional grids. This national transmission grid would enable electricity to be easily transferred from the power generating regions to the power deficit regions of the country.

Power Grid Corporation of India (PGCIL) is the nodal agency for setting up, owning and operating the national grid (inter-regional transmission grid). PGCIL aims to more than double the present capacity from 14,100MW to 37,700MW by the end of FY12E. The estimated cost of this expansion would be Rs750 bn for the national transmission grid and another Rs650 bn for the intra-state transmission grid.

To augment the Ultra Mega Power Projects (UMPPs), matching Ultra Mega Transmission Projects (UMTPs) are planned. These UMTPs would be required to connect the UMPPs to the transmission network. These UMTPs would need to be implemented in time for the commercial operations of the UMPPs. We believe that since the generation projects of these ultra mega sizes are in the hands of the private sector, which would be investing substantial funds by way of equity; there is minimal scope that they would be delayed. We believe that creating power evacuation capacities for the planned 32,000MW of power generation from UMPPs over the next 7-8 years would require substantial investments in the transmission network.

We believe that the new transmission lines would be of varying ratings from 220kV to 765kV, with links from existing power plants being strengthened at the existing ratings, while those at newer power plants would be at higher ratings. We are of the opinion that this would be done to ensure that the present system is not impacted, while at the same time transmission system losses are controlled.

Rs205 bn to be spent on transformers on account of transmission network strengthening

We expect that of the Rs750 bn to be spent on the national transmission grid, at least 10%, or Rs75 bn would be required to be spent on transformers and 20% (Rs130 bn) of the budgeted expenditure on the intra-state transmission network would be spent on transformers.

These investments would help in enabling the transfer of electricity from the power generating regions to the regions where demand exceeds supply.

Distribution network expansion and renovation

The governments' election manifesto of Common Minimum Programme (CMP) outlined to provide reliable electricity supply to all by 2012. This has led the government to focus on providing a substantial outlay for distribution network strengthening and for the Rajiv Gandhi Vidyutkiran Yojana (RGGVY) scheme formulated to achieve the objective of 'Power for All by 2012'. The total outlay for these two areas in the 11th five year plan is Rs2,870 bn, of which an estimated Rs574 bn would be spent on transformers

In the distribution segment, the focus is on improving the quality of power and reducing energy shortages by upgrading the existing network through the APDRP. The outlay for this programme has been increased to Rs80.00 bn in the Union Budget 2008, from Rs65.00 bn allocated for 2006-07.

Rural electrification to fuel Rs23.97 bn worth demand in the transformers sector

The RGGVY aims to ensure that electricity reaches the remotest parts by FY12. The union budget 2008 has increased the outlay to Rs39.83 bn for 2007-08 from Rs30.00 bn that was allocated for 2006-07.

Together this represents a 26% increase in the central outlay for distribution. We believe that both these programmes would lead to increased demand for transmission cables and substation equipment including transformers as they focus on the distribution segment of the power sector value chain. We expect 20% of the project costs (Rs119.83 bn) to be spent on transformers translating into a demand of around Rs23.97 bn annually.

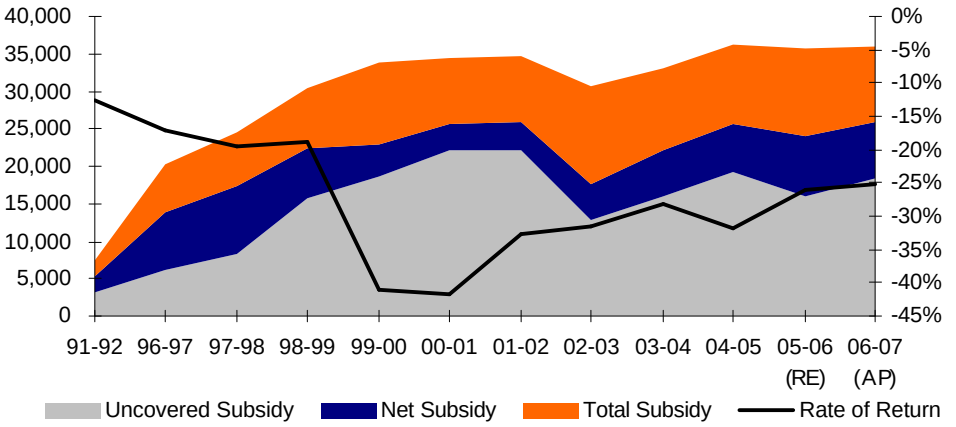
The APDRP to increase demand for distribution transformers

This programme was launched in FY00 as the Accelerated Power Development Programme (APDP) with the objective to provide grants and financial incentives for the capital investment required for distribution network upgradation.

Rs80 bn allocation for APDRP in 2007-08, up from Rs65 bn in 2006-07

In FY04, the APDP was renamed as APDRP and along with this, a new objective was developed, which was to reduce the cash losses incurred by the state utilities. The incentive is in the form of additional cash infusion in through grants to the extent of 50% of the reduction in cash losses. We believe that this is a very strong incentive to restructure the loss making state utilities and thereby strengthen the crucial last leg of the power sector value chain.

Power Sector Subsidies (Rs Cr. – LHS) and Utilities Rate of Return (% – RHS)



source: CEA, MoP; Ministry of Finance

The central government has increased the resource allocation to the APDRP from Rs65.00 bn in the 2006-07 budget to Rs80.00 bn in the recently announced budget for 2007-08. This, we believe, will help achieve the objective to ensure 'Power for All by 2012', as electricity supply would otherwise be constrained by the inadequate sub-transmission network.

Rural electrification presents a vast opportunity

The 'Power for All by 2012' is a key theme of the UPA government's Common Minimum Programme. To achieve this objective, the RGGVY has been formulated. Under this scheme, it is envisaged that access would be provided to at least one electricity point in each household in the country.

Rs160 bn to be spent on rural electrification in the next five years

The RGGVY is being implemented by the Rural Electrification Corporation (REC). REC is providing a grant to the extent of 90% of the capital cost for creating a Rural Electricity Distribution Backbone (REDB). This backbone would have at least one 33/11 kV (or 66/11 kV) substation in each block; a Village Electrification Infrastructure (VEI) with at least one distribution transformer in each village / habitation and a Decentralised Distributed Generation (DDG) System where grid supply is not feasible or cost-effective.

The broad vision of this project is to provide 24 hours good quality supply of electric power so as to enable growth of small, khadi and village industries as well as create more employment opportunities. This scheme envisages providing free of cost electricity connection to rural households living below the poverty line.

The estimated cost for electrifying 100% of the households is Rs210 bn. Of this, we estimate that around Rs50 bn was spent during the 10th five year plan (ended FY07) and the balance Rs160 bn would be spent in the 11th five year plan ending in FY12.

We believe that this programme will lead to increased demand for transmission cables and substation equipment, including transformers, as around 20% of the allocated funds would be used for transformers, which is a key equipment, along with transmission cables.

Industry largely insulated from raw material price flux

Transformer industry largely insultated from raw material price variations

A unique characteristic of the power equipment industry, which includes transformers, transmission towers and power cable manufacturers, is that they are largely insulated from raw material price fluctuations. Majority of sales of transformer companies are to State owned corporations, which award contracts on a tender basis. The companies in their tenders have built in price variation clauses- wherein any increase in raw material cost is borne by the customer.. Hence, any change in raw material prices does not affect the margins of the transformer companies.

The tendered sales process …

In India, around 70% of the total demand for transformers is from the state owned utilities and the PowerGrid Corporation of India (PGCIL) which are the key customers for all the players in the transformers space.

The state owned utilities, including PGCIL follow competitive bidding based tendering route for all its requirements. It is usually the lowest bidder (L1 in industry parlance) who is awarded the contract. At times the contract is shared between the L1, L2 (second lowest bidder) and L3 (third lowest bidder). Most of the contracts from the state owned utilities have an in-built price variation clause, which protects the margins of the bidders, in case of an increase in raw material prices. In the case of a declining raw material price trend, the price realisations of the bidder would be affected, though the margins would continue to be stable.

Price variation clause pegged to IEEMA index

IEEMA index is used as a benchmark to measure raw material price fluctuations

In India, the price variation clause is invariably pegged to the IEEMA index. This index captures variations in the prices of all key raw materials as well as a component of the labour and other cost involved in the manufacture of a transformer.

The Indian Electrical and Electronics Manufacturers' Association (IEEMA) has standardised price variation formulae for each of the different product types such as REC transformers, special transformers as well as for various other products used in the power industry and in a substation including switchgears, cables, transmission line angles and accessories, etc.

The bidding process takes anywhere between six months to a year, the execution is dependent of the type of the transformer order. Distribution transformers take about two months to manufacture, power transformers are manufactured between six to eight months. The final leg of the project execution, which is commissioning of the transformer or sub-station, is dependent on a host of other factors including the whole value chain of the project, which is generation and transmission, under consideration.

As a simplistic example, a transformer that is ordered in the month of April 2007 would have the relevant IEEMA index for that month as the base, and the variation in the benchmark index between April 2007 and say, July 2007, the month of delivery / commissioning of the transformer, would be the difference that the transformer manufacturer would be entitled to, in addition to the quoted price.

Pre-qualification requirements restrict number of players

Pre-qualification requirements to continue restricting the number of players

The major customer for most transformer companies are the state owned corporations, who invite tenders to award contracts to the companies. However, the state owned corporations lay down certain pre-qualifications which have to be met in order to bid for a contract. Typically, the pre-qualification requirements include specified number of prior installations, specific duration for which the installed transformers are under operation and prior track record of timely delivery.

The number of players in transformer manufacturing are limited, with most also having geographic dominance such as Indo Tech Transformers in the southern region and Voltamp in the western region.

The key entry barrier is not the capital investment requirement but the pre-qualifications required by the key customers, the state owned utilities. This effectively ensures that the number of players in this space is more or less limited to the existing players who have adequate pre-qualifications as well as the financial strength to submit the performance guarantees as required by the buyers.

Key industry risks and concerns

Excessive reliance on government investment programme

Transformer industry largely dependent on government spending

The key customer for all the major transformer players are the state owned utilities. This forces the transformer industry to depend on the government's pace of investments and thus, delays in the government investment pattern could affect the order flow of the companies.

A suppliers market for key raw materials

Few suppliers for key raw materials

The key raw materials for the transformer industry, copper and CRGO steel, are manufactured and controlled by a few players and hence any shortfall in supply or inability of the supplier to honour its commitment would put the transformer companies in a dangerous position.

High Working Capital Requirements

Characterised by high WC requirements

The transformer manufacturing industry is characterised by high working capital requirement mainly on account of the high debtor days. The high debtor days is due to 70% of the sales being contributed by the state owned utilities.

On the other hand, the manufacturing process is also between two to eight months, and hence the time gap between the cost incurred and sales being converted into cash is also longer necessitating higher working capital investments.

Competitive Matrix

The major players in the Indian transformer industry are ABB, Areva T&D and Siemens amongst the multinational players. The home-grown players include Bharat Bijlee, BHEL, Crompton Greaves, EMCO, Indo Tech Transformers, L&T and Voltamp Transformers.

Each player has a niche and, though present in all the segments (dry type transformers being the exception), each one has focussed on specific voltage classes and rating of transformers. The following table gives a clear picture of the various players in each transformer class.

While the large players in the transformer industry have the capability to cater to all kinds of demand-ranging from 11kV transformers to the high end 765kV transformers, they generally prefer to use their resources to cater to large projects involving higher rating transformers rather than multiple smaller projects which involve supplying larger volumes of lower rating transformers. As a result, the mid-size players manage to secure tenders for projects at the regional and rural level, which require lower capacity transformers. We have focussed on these mid-size players, as we feel that the robust growth in volumes as well as the supply side shortage would enable them to improve their realisations and profits.

Competitive matrix

	Power Transformers	Distribution Transformers	Dry Type Transformers	Locomotive Transformers	Special Transformers
Application	Used to transform power voltage from the generation point to the transmission point	Used to transform power from the transmission point to the distribution 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 for many indoor commercial and small industrial activities	These are installed in the engine to step down the voltage from the overhead lines	Special transformers like auto, furnace, welding, traction, etc
Voltage Class	66 / 110 / 132 / 220 / 400 / 765 / 800 kV	11 / 22 / 33 / 66 kV			
ABB	above 10MVA	upto 100kVA			Manufactured by all players, though applications and ratings / voltage class may differ
Areva T&D	full range	full range			
BBL	upto 300MVA, 220kV	500kVA to 1600kVA, 33 kV			
BHEL	full range	full range			
CGL	full range	upto 1600kVA	Manufactured		
EMCO	upto 315MVA, upto 400kV	full range, upto 16MVA, upto 66kV		Up to 7.5 MVA single & three phase, 25kV 230 kV	
ITTL	upto 200MVA, upto 400kV	upto315MVA, upto 33kV	Manufactured		
L&T	upto 100MVA	full range			
VTL	upto 100MVA Above 5,000KVA, 33kV to 50,000KVA, 132 kV	above 100kVA, 11 kV and 5,000KVA, 33kV	Manufactured		

Source: Company's, Emkay Research

Growth all round …. In volumes, realisations and margins

45% CAGR growth in revenues expected over the next two years

Volumes of the transformer manufacturers are likely to increase on account of the robust demand scenario in the country, while realisations could improve due to the expected demand supply gap in the transformer industry. Even with all the major players expanding operations and increasing capacities, the anticipated shortage for transformers is expected to benefit all the players in the industry. Moreover, with the tendering process protecting the transformer companies from raw material price vagaries, margins are likely to be maintained. The transformer companies under our coverage have increased capacity at their existing facilities, thereby ensuring better economies of scale. As a result of this overall growth (volumes, realisations and margins), the transformer companies under our coverage are likely to outperform the industry.

We believe that the transformer industry is likely to witness overall growth - in volumes, realisations and margins. The huge demand for transformers is likely to see a volume growth of 20%. Moreover, the demand supply mismatch will help transformer companies price their tenders at higher levels, resulting in better realisations also.

Even with all the major players expanding operations and increasing capacities, the expected shortage in transformers is expected to benefit all the players in the industry.

We do not expect a major change in the customer mix, with government owned utilities continuing to dominate the buyers. This stems from the unique nature of the Indian power sector where only a miniscule portion is privatised, and hence the focus on sales to government owned utilities.

Valuation

While we are bullish on the transformer industry as a whole, we have initiated coverage on Bharat Bijlee, EMCO and Indo Tech Transformers among other transformer companies. We believe that these companies will be major beneficiaries of the current uptrend in the transformer industry on account of the following reasons -

- Higher growth in revenues on account of more demand and increased capacity - The companies under our coverage have identified the strong growth potential of the transformer industry in the near future and have expanded capacity ahead of the increase in transformer demand. As a result, as the demand for transformers increases, they are likely to have increased capacity to cater to the demand. This is likely to result in huge volume growth and subsequently higher revenues.

- Healthier margins on account of economies of scale - The companies under our coverage have increased capacities at their existing facilities enabling them to enjoy economies of scale. Insulation from raw material price vagaries combined with operating leverage are likely to ensure better margins.

We believe that the companies under our coverage will outperform the industry on account of the above mentioned reasons.

We estimate that the combined sales of Emkay's universe of companies would increase from Rs12,814 mn in FY07 to Rs27,006 mn in FY09E, a CAGR of 45% over the next two years. We estimate that the EBITDA margins of the companies under Emkay's coverage would remain increase to 17.1% in FY09E from 16.6% in FY07.

We believe that Bharat Bijlee is one year ahead of its peers in terms of capacity expansions as well as valuations. Bharat Bijlee completed its capacity expansion programme in Q1FY07 while the other companies under Emkay's coverage, EMCO and Indo Tech Transformers would be completing their capacity expansion programme by June 2007 and October 2007 respectively.

Bharat Bijlee, EMCO and Indo Tech Transformers quote at 20.9x, 37.9x and 15.5x their FY07 earnings respectively. The other players in the power equipment segment like Areva T&D, Crompton Greaves and Voltamp Transformers trade at 48.8x, 25.3x and 19.3x its FY07 earnings respectively. Bharat Bijlee and EMCO trade at multiples higher than Indo Tech Transformers or Voltamp Transformers as both these companies derive around 25% of its income from segments other than transformers.

We believe that the companies under our coverage will outperform the industry and therefore deserve higher valuations. All the companies under our coverage trade at 8x-10x FY09E earnings (a 20%-50% discount to their fair values), thereby leaving considerable room for upside from these levels.

Bharat Bijlee is currently trading at 10.2x FY09E EPS of Rs209. On EV / EBITDA basis, the stock is currently trading at 6.4x FY09E. We have valued the company using the sum-of-the-parts (SOTP) method and have arrived at separate values for its core business of manufacturing and trading in electrical equipment at Rs2,510 based on 12x FY09E EPS and Rs296 for its investment portfolio. We have conservatively valued the investments at 80% of the market price. We initiate coverage on Bharat Bijlee with a BUY rating and a price target of Rs2,806 an upside of 32% from the current level of Rs2,128.

EMCO, at its current price of Rs779, is trading at 11.7x its FY08E earnings and 9.2x its FY09E earnings of Rs66.7 and Rs85.1 respectively; and EV/EBITDA of 6.9x FY08E and 5.2x FY09E. We have valued EMCO on a sum-of-the-parts (SOTP) basis, based on our FY09E estimates. We have valued the core business, which includes transformers energy meters and its EPC business on a P/E of 12x its FY09E earnings per share and we have valued EMCO's investment in its power generation subsidiary at the face value of its equity investment. We initiate coverage on EMCO with a BUY rating and a target price of Rs1,076, an upside of 38% from the CMP of Rs779.

We believe that Indo Tech Transformer's EPS would grow at a CAGR of 33% over FY07-FY09E to Rs42.3 in FY09E. The company trades at a P/E multiple of 13.3x its FY08E EPS of Rs29.4 and 9.3x its FY09E EPS of Rs42.3. At a P/E of 12x its FY09E, we initiate a BUY recommendation with a price target of Rs508, an upside of 29% from the current levels.

We initiate coverage on this industry with a positive bias and with Bharat Bijlee being our top pick, followed by Indo Tech Transformers and EMCO respectively.

Comparative financial table

Rs mn	BBL	EMCO	ITTL
Revenues			
FY07	4,699	6,558	1,557
FY08E	6,453	11,882	2,496
FY09E	8,725	14,706	3,576
EBITDA			
FY07	887	865	378
FY08E	1,275	1,636	477
FY09E	1,814	2,104	700
EBITDA (%)			
FY07	17.1	11.3	18.1
FY08E	18.9	13.2	24.3
FY09E	19.8	13.8	19.1
Adj PAT			
FY07	565	406	254
FY08E	825	803	313
FY09E	1,182	1,025	449
EV / EBITDA			
FY07	13.5	13.7	10.3
FY08E	9.4	6.9	8.3
FY09E	6.4	5.2	5.3
P/E (x)			
FY07	21.3	37.2	16.4
FY08E	14.6	11.7	13.3
FY09E	10.2	9.2	9.2
RoIC (%)			
FY07	41.6	13.5	105.8
FY08E	42.2	23.7	41.5
FY09E	47.5	20.3	47.0

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Emkay Research

25 June, 2007

Bharat Bijlee

Expanded capacity to help achieve growth

Initiating

Buy

Price	Target Price
Rs 2,128	Rs 2,806

Sensex - 14,467

Bharat Bijlee (BBL) is likely to see robust growth driven by the rising demand for transformers. BBL is enhancing capacity at an opportune time when transformer demand is soaring thereby cashing in on the uptrend. While the transformer division is going to be the main growth driver for BBL, the high margin motor segment is likely to help it enjoy higher margins than its peers. We expect a healthy 36% revenue growth and a 45% earnings growth over FY07-09E. BBL currently trades at 6.4x FY09E on EV / EBITDA basis, and 10.2x FY09E EPS of Rs209. We initiate coverage on the stock with a BUY and a target price of Rs,2,806, an upside of 32% from the current levels.

Price Performance

(%)	1M	3M	6M	12M
Absolute	25	84	81	103
Rel. to Sensex	24	69	69	44

Source: Bloomberg

Stock Details

Sector	Power Equipment
Reuters	BBJL.BO
Bloomberg	BIJL@IN
Equity Capital (Rs mn)	57
Face Value (Rs)	10
52 Week H/L(Rs)	2185/777
Market Cap (Rs bn)	12.0
Daily Avg Volume (No of shares)	17,154
Daily Avg Turnover (US$ mn)	0.7

Shareholding Pattern (%)

(31st Mar.'07)

Promoters	35.4
FII/NRI	2.8
Institutions	26.2
Private Corp./Others	7.7
Public	27.9

Source: Capitaline

Transformer demand to fuel high growth

Bharat Bijlee is expected to see a healthy 36% CAGR growth in revenues on the back of robust demand for transformers. Increased thrust on power projects in all key areas of generation, transmission and distribution is likely to spur huge demand for transformers. Bharat Bijlee, which derives a major portion of its income from its transformer division is one of the key beneficiaries of this uptrend in the transformer industry. The rapid growth in the transformer segment is likely to see a shift in Bharat Bijlee's sales mix - with the revenues from the transformer segment estimated to constitute 78% in FY09E as against the current 67% of total revenue.

Capacity addition to help Bharat Bijlee cash in on transformer uptrend

Bharat Bijlee has expanded its transformer capacity from 3,800MVA to 8,000MVA in Q1FY07, and is now planning to increase it further to 11,000MVA in FY08E. We expect the company to utilise 90% of its capacity in FY09E, the first full year of operating its 11,000MVA capacity. Bharat Bijlee's enhanced capacity at an opportune time when transformer demand is soaring, is likely to see it cash in on the uptrend

Investment portfolio large enough to finance capex requirements

The company is unlikely to need further capital infusion for its expansion projects. In the event of Bharat Bijlee requiring funds for greenfield expansion, we believe that it would encash its Rs2,000 mn investment portfolio at an opportune time to fund its capital expenditure needs. This would ensure that the company would not need to look to any external sources for funding the next round of its expansion plans.

Valuations

The stock is currently trading at 10.2x FY09E EPS of Rs209 and 6.4x FY09E EV / EBITDA. We have valued the company using sum-of-the-parts (SOTP) method, valuing its core business of manufacturing and trading in electrical equipment at Rs2,510, based on 12x FY09E EPS and investments in listed companies at Rs296. We initiate coverage on Bharat Bijlee with a BUY rating and a price target of Rs2,806 an upside of 32% from the current level of Rs2,128.

Key financials

	Net Sales (Rs. mn)	EBITDA (Rs. mn)	EBITDA (%)	Adj PAT (Rs. mn)	EPS (Rs.)	EPS Growth(%)	RoCE (%)	P/E (x)	EV / EBITDA(x)
FY06	3,008	514	17.1	322	56.9	73	51.1	24.3	15.6
FY07	4,699	887	18.9	565	100.0	76	68.4	21.3	13.5
FY08E	6,453	1,275	19.8	825	145.9	46	74.3	14.6	9.4
FY09E	8,725	1,814	20.8	1,182	209.2	43	72.7	10.2	6.4

Company Background

Bharat Bijlee was founded in 1946 to manufacture electrical equipment. The company started manufacture of transformers in 1954. Later in 1958, the company entered into collaboration with Siemens AG for the manufacture of motors and transformers. While the transformers were marketed by Siemens India upto 1980, the motors and pumps were marketed by Cable Corporation of India upto 1990, after which the company undertook the marketing activities itself in a phased manner. In 1972 the company entered into the lifts segment to manufacture and install the 'Olympus' brand of lifts. In 2004, the company transferred the field operations of this division to Kone Elevators, a subsidiary. This division was sold in 2005 to enable the company concentrate on its core business of electrical equipments, mainly motors and transformers.

The company's industrial electronics and instrumentation division caters to the demand for specialised industrial drives and control systems. The projects division of the company caters to designing, installation and commissioning of high tension electrical switchyards and distribution systems on turnkey basis.

Product Range

The company manufactures distribution transformers, power transformers, special transformers; and also motors and pumps for industrial use.

Bharat Bijlee derived 67% of its revenues from transformers, while the motors division contributed 28% to the revenues in FY07. The balance revenues are from its spares and service of its divested elevators business, and traded motors and pumps.

Wide range of transformers … and motors and pumps

BBL's Product Range

Distribution Transformers	500kVA to 5,000kVA; upto 33kV class
Power Transformers	Upto 160MVA; upto 220kV class
Generator Transformers	Type of Power Transformer used in at a generating station
Dry Type Transformers	These transformers have air, instead of oil, for insulation and heat dissipation; and are mainly used in areas of fire hazard and closed areas such as malls, multiplexes, etc where space is a constraint
Special Transformers	Motor Starting Transformers – used for starting large induction or synchronous motors. These function as auto transformers and then function as reactorsThyristor Duty Transformers – used where high power direct current (DC) is required such as chemical and steel industry.While one end of the transformer is connected to the supply system and the other side is connected to the thyristor for conversion from alternating current (AC) to direct current (DC).Locomotive Transformers – are mounted directly on the locomotive used for hauling passengers and goods trains
Motors	Upto 200kW, to be expanded to 400kW motorsThree Phase AC Induction MotorsAlso markets single and three phase motobloc, centrifugal and submersible pumps

source: Company

Investment Thesis - Expanded capacity to help achieve growth

Transformer demand to fuel high growth for Bharat Bijlee

The transformers' segment would continue to lead the company's next growth phase. The estimated generation capacity addition of 67,900MW (planned capacity addition is 110,577MW) in the next five years and the focus on rural electrification would lead to higher growth in the power transformers and distribution transformers respectively. We expect Bharat Bijlee to tap these burgeoning segments and grow at a CAGR of 36%, a rate faster than that of the industry.

The expected 170,000MVA annual demand would ensure that Bharat Bijlee can optimally utilise even its expanded capacity of 11,000MVA (in FY08E).

Transformer segment to grow at 46% CAGR and contribute 78% of revenues

We believe that the estimated demand of 170,000MVA would continue to be ahead of the supply of 128,750MVA of the industry. We expect Bharat Bijlee to take advantage of this to grow at a rate faster than that of the industry. Bharat Bijlee would increase its transformer production at a CAGR of 25% over the next two years from 6,359MVA in FY07 to 8,250MVA in FY08E, and further to 9,900MVA in FY09E. In revenue terms, this translates into an increase of 46% CAGR over the two year period to Rs6,783 mn.

capacity in motors' segment

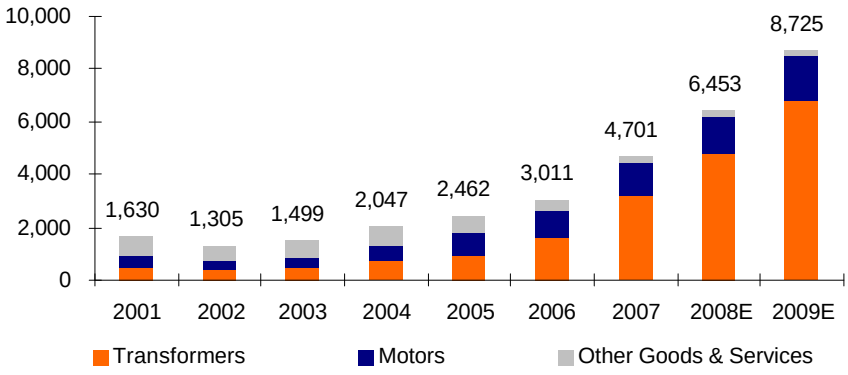
Capacity addition to further help Bharat Bijlee cash in on transformer uptrend

Bharat Bijlee has embarked on a major capacity expansion programme, increasing its transformer capacity from 3800MVA to 11000MVA by FY08. This capacity expansion coincides with the current transformer boom, thereby enabling Bharat Bijlee to fully cash in on the uptrend.

Bharat Bijlee's transformer manufacturing capacity increased two fold from 3,800MVA to 8,000MVA in Q1FY07. The company is likely to further increase its transformers' capacity to 11,000MVA in FY08E. We believe that this capacity expansion would stand the company in good stead. The increased capacity has enabled Bharat Biljee to increase its focus on the growing transformers' business. The expected shortage in capacity and the continual demand-supply gap in the transformer industry would ensure that the company's capacity utilisation rate continues to remain above the 90% mark.

We believe that Bharat Bijlee would be able to utilise 90% of its capacity by FY09E, up from 79% in FY07.

Transformers – Mainstay of the company



Source: Company, Emkay Research

Bharat Bijlee's revenues from its transformers' line of business has shown a healthy 95% jump in FY07 to Rs3,161 mn on account of its expanded capacity being operational since Q1FY07. We expect the company's revenues from the transformer segment to grow at a CAGR of 46% over FY07-09E to reach Rs6,783 mn. The higher revenue growth would be achieved on the back of higher realisations and capacity utilisation improving from 79% in FY07 to 90% of the expanded 11,000MVA capacity in FY09E.

Bharat Bijlee to have higher margins than peers on account of motor segment

Capacity of motors' segment expanded to 1,000HP

Bharat Bijlee has expanded its motors' capacity from 750HP to 1,000HP in FY07. The company achieved a high 90% utilisation rate on the expanded capacity. This signifies the robust demand scenario for the company's motors. The company has also decided to upgrade its facilities to be able to manufacture 400kW motors as against the present capability to manufacture 200kW motors. We believe that this would enable the company to offer a wider product range to its customers, and thereby tap a larger market.

Motors' segment revenues to grow at 14% CAGR

The motors segment is expected to grow at a CAGR of 14% over FY07-09E to reach revenues of Rs1,691 mn in FY09E, based on better realisations and 100% capacity utilisation. We do not expect the motor business do be a key growth driver for Bharat Bijlee.

We estimate that the motors' lines of business would contribute 19% to the total revenues in FY09E, as against 28% in FY07. This change in revenue mix would be due to the increased contribution from the transformers segment.

Bharat Bijlee's forte in the motors segment are its products for the sugar industry. These motors are used in the crystallisation process of making sugar, and in the cranes used to unload sugarcane.

Marginal Growth in other business

We expect the total revenues from other lines of business, which include spares and services for its elevators business (since divested) and traded goods, to grow at a marginal 4% CAGR over FY07-09E to Rs263 mn.

No income from service revenue from erstwhile elevators business

This marginal growth is due to the 35% CAGR growth in Bharat Bijlee's revenues from electrical traded goods business being offset by discontinuance of spare parts and maintenance products by FY09E.

Investment portfolio to fund future greenfield projects

Bharat Bijlee holds a small investment portfolio. While the cost of these investments is only Rs29.75 mn, at current market value this is worth around Rs2,000 mn, or Rs370 per share.

Rs296 per share is the discounted market value of the investment portfolio

We believe that this investment portfolio of strong and healthy companies is an added upside to the stock. We have, for prudence and conservatism, valued this at a 20% discount to the current value. This results in a value of Rs296 per share.

Once Bharat Bijlee's existing plant locations are fully utilised, any further expansion would have to be carried out through greenfield projects. We expect the company to cash in on this investment portfolio at the opportune time to fund the next round of expansion, possibly in the next two to three years. This would also ensure that the company can expand further without the need for any equity dilution.

Financials

Higher working capital requirement

High WC required to fund higher revenue growth

The working requirement is estimated to be higher from the current fiscal onwards on account of the increased capacity.

The company's creditor days have consistently reduced over the past years from 103 days in FY05 to 90 days in FY07 while adequate control over its inventory is on account of better raw material procurement policy. The company now procures its raw materials on a need basis, and has thus freed some working capital requirement. The increasing debtor days (at around 110 days) on the other hand is a reflection of the company's increasing transformers sales, which is mainly to the state-owned utilities. These factors have led to an increase in working capital requirement of Rs184 mn during FY07. We expect an additional Rs1,090 mn to be invested in working capital requirements over the next two years.

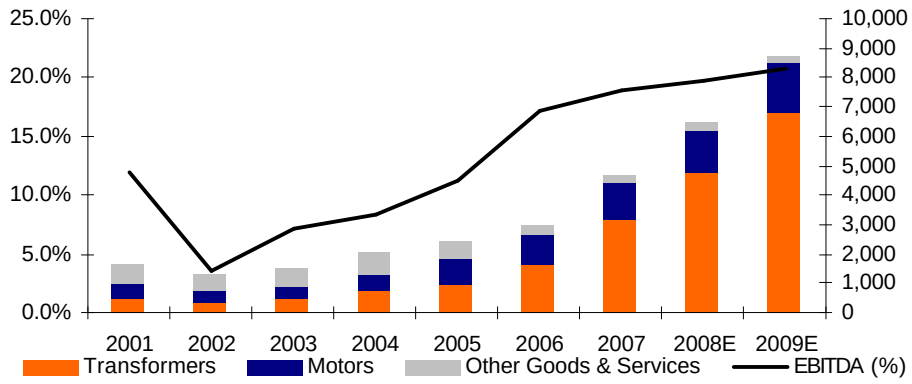
Sales mix to stabilise with increased focus on transformers

Higher revenue contribution from the transformer segment

We believe that Bharat Bijlee's revenue mix would further change in favour the transformer segment. This would be triggered by an increase in capacities and realisations of transformers, flat realisations in the motors segment and also a reduction in the revenues from spares and services which would be discontinued as the company has divested its elevator business.

We believe that sales of transformers would stabilise at 75%-80% of the total sales of the company, while the contribution from its motors segment would stabilize at around 20%-23% of the total revenues. Traded products would continue to contribute marginally to the company's revenues.

Revenue Break Up (RHS – Rs mn.) and EBITDA Margin (LHS – %)



Source: Company, Emkay Research

Valuations

The company justifies its valuation on account of high revenue and profit growth achieved through internal accruals and very low reliance on debt.. We expect the company to sustain its high return on invested capital of 41% (post-tax basis) in FY07. The company would not be diluting its equity to fund further expansion plans and, as in the past, would manage to continue to grow by meeting its funding requirements from internal accruals.

The stock is currently trading at 10.2x FY09E EPS of Rs209. On EV / EBITDA basis, the stock is currently trading at 6.4x FY09E. We have valued the company using the sum-of-the-parts (SOTP) method and have arrived at separate values for its core business of manufacturing and trading in electrical equipment at Rs2,510, based on 12x FY09E EPS and Rs296 for the investments in listed companies. We have conservatively valued the investments at 80% of the market price of the listed investments.

Valuation (Rs per share)

Operational Area	Value / Share (Rs)	Basis of Valuation
Business Operations	2,510	PER of 12x on FY09E EPS
Investments in Listed Companies	296	Based on CMP
Total	2,806	

source: Emkay Research

We believe that Bharat Bijlee's ability lies in consistent revenue and profit growth without diluting its equity. The company has maintained its pre-tax return on invested capital at over 50%. Bharat Bijlee would not need to tap either the equity or debt markets to fund its capital expenditure plans.

We believe that this would enable the company to deliver superior return and thereby enhance shareholder value.

We initiate coverage on Bharat Bijlee with a BUY rating and a price target of Rs2,806 an upside of 32% from the current level of Rs2,128.

Profit & Loss Statement

Mar end (Rs mn)	FY06	FY07	FY08E	FY09E
Net Sales	3,008	4,699	6,453	8,725
Growth %	22.3	56.2	37.3	35.2
Raw Mat Consumption	1,963	3,094	4,149	5,666
As a % to Net Sales	65.3	65.9	64.3	64.9
Power & Fuel	22	33	46	62
As a % to Net Sales	0.7	0.7	0.7	0.7
Staff Cost	252	342	585	673
As a % to Net Sales	8.4	7.3	9.1	7.7
Other Expenses	257	341	398	510
As a % to Net Sales	8.5	7.3	6.2	5.8
Total Exp	2,493	3,811	5,178	6,911
EBIDTA (Core)	514	887	1,275	1,814
EBIDTA (%)	17.1	18.9	19.8	20.8
Other Income	35	41	46	50
Depreciation	18	29	42	50
EBIT	531	899	1,278	1,813
Interest	47	53	38	35
PBT	484	846	1,240	1,778
Tax	162	281	416	596
ETR (%)	33.5	33.2	33.5	33.5
A PAT	322	565	825	1,182

Source : Company, Emkay Research

Balance Sheet

Mar end (Rs mn)	FY06	FY07	FY08E	FY09E
Equity Capital	57	57	57	57
Reserves & Surplus	702	1,102	1,728	2,679
Networth	758	1,158	1,785	2,736
Total Debts	425	260	229	229
Net deferred liab	8	5	5	5
Capital Employed	**1,192**	**1,423**	**2,019**	**2,970**
Gross Block	501	561	811	961
Less Depreciation	(208)	(222)	(265)	(315)
CWIP	2	0	150	150
Net Fixed Assets	296	338	696	796
Investments	183	187	187	187
Inventory	430	640	879	1,188
Debtors	977	1,425	1,945	2,629
Cash and Bank	62	102	103	432
Loans & Advances	336	706	706	706
Total Curr. Assets	1,805	2,873	3,632	4,955
Current Liabilites	668	1,159	1,680	2,151
Provisions	424	817	817	817
Total Curr. Liabilities	1,092	1,977	2,497	2,969
Net Current Assets	713	897	1,136	1,987
Total Assets	**1,192**	**1,423**	**2,019**	**2,970**

Source : Company, Emkay Research

Cash Flow

Mar end (Rs mn)	FY06	FY07	FY08E	FY09E
PBT	484	846	1,240	1,778
Depreciation	18	29	42	50
Net Chg in WC	(286)	(144)	(238)	(522)
Others	(138)	(299)	(416)	(596)
Cash from Operations	78	432	629	710
Capex	(86)	(72)	(400)	(150)
Net Investments made	(155)	(4)	0	0
Other Investing Activities	0	0	0	0
Cash from Investing	(241)	(76)	(400)	(150)
Change in Share capital	16	14	0	0
Change in Debts	75	(165)	(30)	0
Div. & Div Tax	(87)	(165)	(198)	(231)
Others	0	0	0	0
Cash from Financing	4	(316)	(229)	(231)
Total Cash Generated	(159)	40	1	329
Cash Opening Balance	221	62	102	103
Cash Closing Balance	62	102	103	432

Source : Company, Emkay Research

Ratios

Mar end	FY06	FY07	FY08E	FY09E
EBIDTA - Core (%)	17.1	18.9	19.8	20.8
EBIT (%)	17.6	19.1	19.8	20.8
NPM (%)	10.6	11.9	12.7	13.5
Adj ROCE (%)	51.1	68.4	74.3	72.7
Adj ROE (%)	51.4	59.0	56.0	52.3
ROIC (%)	38.6	41.6	42.2	47.5
Adj EPS (Rs)	56.9	100.0	145.9	209.2
Cash EPS (Rs)	60.2	105.2	153.5	218.1
Book Value (Rs)	134.2	205.0	315.8	484.1
DPS (Rs)	13.5	25.0	30.0	35.0
Payout (%)	23.7	25.0	20.6	16.7
Debt Equity (x)	0.6	0.2	0.1	0.1
PE (x)	24.3	21.3	14.6	10.2
P/BV (x)	10.3	10.4	6.7	4.4
EV/Sales (x)	2.7	2.6	1.9	1.3
EV/EBITDA Core (x)	15.6	13.5	9.4	6.4
Div Yield (%)	1.0	1.2	1.4	1.6

Source : Company, Emkay Research

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Emkay Research

25 June, 2007

Buy

Price	Target Price
Rs 779	**Rs 1076**

Sensex - 14,467

Price Performance

(%)	1M	3M	6M	12M
Absolute	(2)	(5)	9	65
Rel. to Sensex	(3)	(13)	1	18

Source: Bloomberg

Stock Details

Sector	Power Equipment
Reuters	EMCO.BO
Bloomberg	EMCO@IN
Equity Capital (Rs mn)	93
Face Value (Rs)	10
52 Week H/L(Rs)	903/389
Market Cap (Rs bn)	7.3
Daily Avg Volume (No of shares)	16849
Daily Avg Turnover (US$ mn)	0.3

Shareholding Pattern (%)

(31st Mar.'07)

Promoters	32.6
FII/NRI	30.0
Institutions	14.8
Private Corp./Others	14.6
Public	8.0

Source: Capitaline

EMCO

Initiating

Powering Ahead

EMCO is doubling its transformer manufacturing capacity to 20,000MVA in FY08E from an effective capacity of 10,000MVA in FY07. The company is also increasing the utilisation at its energy meters plant and increasing its focus on its EPC division. We expect EMCO's revenues to increase at a CAGR of 50% over FY07-09E to Rs14,076 mn in FY09E, while its EPS would reach Rs85.1 in FY09E. At its current price of Rs779, EMCO is trading at 11.7x its FY08E earnings and 9.2x its FY09E earnings of Rs66.7 and Rs85.1 respectively; and EV/EBITDA of 6.9x FY08E and 5.2x FY09E. We initiate coverage on EMCO with a BUY rating and a target price of Rs1,076 on a SoTP basis, an upside of 38% from the CMP of Rs779.

Doubling transformer capacity

We believe that the Rs150 mn investment in doubling its transformer manufacturing capacity to 20,000MVA would ensure that EMCO becomes one of the largest transformer manufacturers in India. The enhanced capacity should be fully operational by July 2007. We believe that the company's transformer division's gross revenues would grow to Rs10,532 mn in FY09E, registering a CAGR of 48% over FY07E-09E.

Enhancing focus on EPC business - through inorganic growth

EMCO purchased Urja Engineers Ltd (UEL), which is engaged in manufacturing telecom and transmission towers and undertakes transmission EPC activities. We believe this acquisition would enable EMCO to increase its focus on its EPC business, and also enhance its range of EPC services.

EMCO would be now be able to derive synergies as this company focuses on a related, though different, segment than EMCO's own EPC business. EMCO now would be able to offer transmission EPC services in addition to its existing services in substations EPC segment.

New initiatives - potential growth drivers

EMCO has taken up new initiatives which have the potential to be growth drivers in the future. The company is foraying into the 400kV transformers for which it has a technology tie-up with a Chinese company. The company is finalising a tie-up for manufacturing switchgears and has set up EMCO Energy as a subsidiary for its power generation.

Valuation

At its current price of Rs779, EMCO is trading at 11.7x its FY08E earnings and 9.2x its FY09E earnings of Rs66.7 and Rs85.1 respectively; and EV/EBITDA of 6.9x FY08E and 5.2x FY09E.

We have valued EMCO on a sum-of the-parts (SOTP) basis, based on our FY09E estimates. We have valued the core business, which includes transformers and energy meters, and its EPC business on a P/E of 12x its FY09E earnings per share. We have added the FY09E estimated equity investment in EMCO Energy to the value of its core business.

We initiate coverage on EMCO with a BUY rating and a target price of Rs1,076, an upside of 38% from the CMP of Rs779.

Key financials

	Net Sales (Rs. mn)	EBITDA (Rs. mn)	EBITDA (%)	Adj PAT (Rs. mn)	EPS (Rs.)	EPS Growth(%)	RoCE (%)	P/E (x)	EV / EBITDA(x)
FY06	4,054	459	11.3	191	22.5	47.9	12.5	35.0	16.7
FY07	6,558	1,044	15.9	584	37.4	66.4	14.5	20.8	10.9
FY08E	11,882	1,636	13.8	803	66.7	78.4	15.3	11.7	6.7
FY09E	14,706	2,104	14.3	1,025	85.1	27.6	14.5	9.2	5.3

Company Background

EMCO was established in 1964 with a plant at Thane, near Mumbai. The company had a collaboration with Secheron Ltd. a Swiss based company, which later became a part of the ABB group. In 1987, the company came under the management of Rajesh Jain & Shailesh Jain, its present promoters.

The company set up its Jalgaon plant to cater to the increasing demand of special transformers. EMCO is expanding its transformer manufacturing facilities to reach a capacity of 20,000MVA. The company has also entered into a technology agreement with a Chinese transformer manufacturer which would enable it to gain a foothold in the 400kV transformer class.

In 1996, EMCO forayed into manufacturing of electronic energy meters with a facility for 1.3 mn meters and set-up a projects division for undertaking turnkey projects.

Investment Thesis - Powering Ahead

Doubling Transformer Capacity

Doubling transformer capacity in FY08E to 20,000MVA

The anticipated demand for transformers in the power generation, transmission and distribution segments, including that from rural electrification would help fuel EMCO's growth. We expect the total transformer demand to be 170,000MVA annually for the next five years.

EMCO is investing Rs150 mn in expanding its transformer manufacturing capacity from the existing 10,000MVA to 20,000MVA. 5,000MVA of this expansion has already been completed, and the balance 5,000MVA expansion would be complete by July 2007. We believe that this would enable EMCO to increase its sales quantum by around 70% to 15,000MVA in FY08E, and further to 18,000MVA in FY09E. We expect that this capacity addition would enable EMCO to ride on the transformer boom and derive higher gains by playing on the operating leverage as the expansion has taken place at its existing facilities.

We believe that this incremental capacity would take EMCO to a different league, and it would be one the biggest transformer manufacturers in India. We believe that the company's transformer division's gross revenues would grow to Rs10,532 mn in FY09E, registering a CAGR of 48% over FY07E-09E, driven mainly by the surging transformer sales volumes.

Acquisition of IEIL - Strengthening EPC business

Inorganic growth to add to topline and bottomline … and add synergies

In March 2007, EMCO purchased India Energy Investments Ltd (IEIL), the holding company of Urja Engineers Ltd (UEL). UEL is engaged in the business of manufacturing telecom and transmission towers and also undertakes EPC activities. EMCO acquired this company in a stock plus cash deal. This acquisition would lead to a further equity dilution of 1.2 mn equity shares (Rs12 mn), or 11.6% of its FY07E equity capital and has led to a cash outgo of Rs250 mn.

Urja Engineers reported revenues of about Rs800 mn and a net profit of approximately Rs90 mn in FY07E. We believe this merger would enable EMCO to add Rs1,000 mn to its FY08E revenues, which would be 8% of its total FY08E revenues. We estimate that the revenue from this division would increase to Rs1,250 mn in FY09E. This merger is effective 1st April 2007 and hence we would see a quantum jump in the company's revenues and profits on account of this merger in FY08E.

We believe that this acquisition would also enable EMCO to derive synergies in its own EPC business and offer a wider range of EPC services. EMCO's EPC division currently undertakes EPC contracts for setting up substations. The acquisition of Urja Engineers would now enable EMCO to expand its service offerings in the transmission EPC segment. EMCO would also benefit from the existing pre-qualification of Urja Engineers.

Potential Value kickers

Foray into other power equipments like switchgear

EMCO has taken up new initiatives like foray into the 400kV transformers, tie-up for manufacturing switchgears and setting up EMCO Energy - which have the potential to be growth drivers in the future. The capacity addition in the transformer segment would help EMCO cash in on the boom in transformer demand, thereby improving revenues and profitability from this segment. Similarly, on the EPC business, EMCO has acquired IEIL- boosting its revenues and helping it strengthen its EPC business. The other initiatives undertaken by EMCO have no immediate impact on revenues or profitability but have the potential to become growth drivers in the future.

Foray into 400kV class transformers - promises future potential

To foray into higher voltage class transformers

EMCO has inked a technology transfer agreement with Tainwei Baobian Electric Co Ltd., a Chinese transformer manufacturer with a capacity of 80,000MVA.

We believe that this would enable EMCO to manufacture a wide range of 400kV class transformers. This would help EMCO make a foray into the regional transmission segment and partly the national grid strengthening projects which have an expected outlay of Rs205 bn over the next five years. We expect the technology transfer to take atleast 10-12 months, and another six months to ensure that the transformers adhere to all the field tests and other relevant approvals. The company would also require further time to obtain pre-qualifications from the PowerGrid Corporation of India (PGCIL) and other state utilities. We have, hence, not considered any revenue from this source.

Switchgears to add to product range

Technological tie-up for switchgears in the offing

EMCO is also in the process of finalising a technological tie-up for manufacturing switchgears. We believe that the company is working in this direction, and has estimated that the proposed facility would require an investment of Rs200 mn.

The proposed medium and high range switchgear facility, as and when it materialises, would have a ready market from the company's growing projects division which could absorb a substantial portion of the production from this line of business.

Switchgears are typically used in substations, and are connected to transformers for protecting the equipment and electricity grid in case of faults and distruburances.

We believe that it is pre-mature to put a value to either the cost or the opportunity at this stage from this new proposed line of business. We have not considered this proposed project in our valuations. However, we believe that this venture promises to have good growth potential in the future.

EMCO Energy

EMCO intends to set up a 135MW domestic coal based power plant at an estimated investment of Rs6,000 mn. This investment would be funded on a debt-equity ratio of 80:20, thereby entailing an equity participation of Rs1,200 mn. The debt of Rs4,800 mn would be raised directly by the subsidiary EMCO Energy.

New power plant valued at Rs54 per share

This power plant is likely to be set up as a merchant power plant (MPP), a model wherein the power generator does not sign any power purchase agreements (PPAs), but instead sells power in the spot market The advantage of the MPP model is that in a power deficit scenario the returns could be higher. The downside is the lack of assured returns and the business being subject to market vagaries such as of high demand and plant loads during the day time but sharp drops during off-peak hours.

We do not foresee any revenues from this company before FY10E and hence we have not considered the DCF based valuation. Instead, we have valued this subsidiary at the cost of equity investment, which we believe would be the fair value for this project. We have valued EMCO's investment in this project at the face value of the equity investment made, which is Rs21 per share of EMCO at end FY08E, and Rs54 per share of EMCO at end FY09E. On a DCF basis, the value for this venture would have been Rs89 per share of EMCO.

Financials

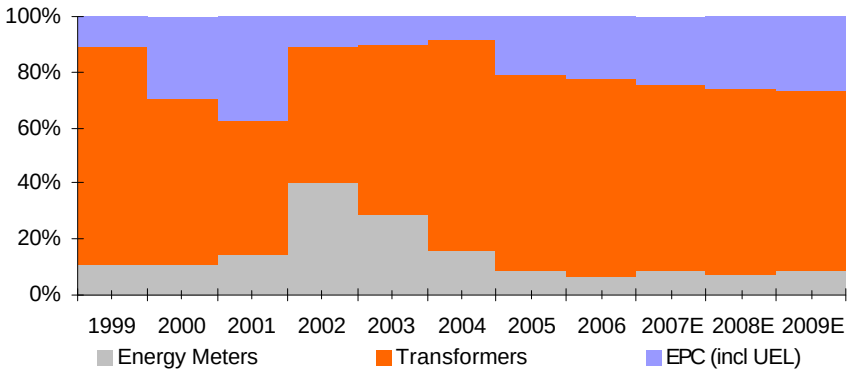
Sales growth to plateau in FY09E

Sales growth rate to plateau due to acquisition …

We believe that there could be a plateau in the revenue growth in FY09E. We believe this would happen on account of higher base effect due to incremental transformer capacity addition in FY07 and incremental revenues from the Urja Engineers acquisition in FY08E which would add an estimated Rs1,250 mn to the revenues of EMCO.

Increasing share of Transformers and EPC (LHS) and Stabilising Margins (RHS)

Increasing share of Transformers and EPC (LHS) and Stabilising Margins (RHS)



Source: Company, Emkay Research

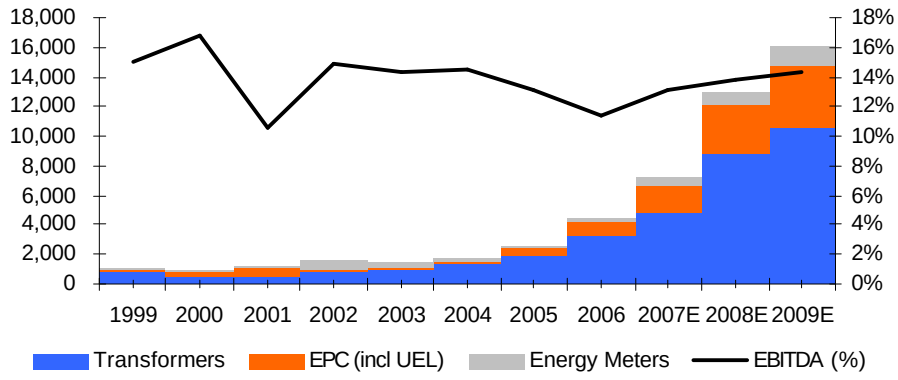
Improved EBITDA - a reflection

EBITDA to improve to 14.3% in FY09E from 13.2% in FY07

We estimate that EMCO's EBITDA margins would consistently improve over the next two years from 11.3% in FY06 and 13.2% in FY07 to 14.3% in FY09E.

We believe that EMCO would be able to improve its margins on account of higher income from the EPC business, which would contribute 26% of the total revenues in FY09E, up from 23% in FY06 and 25% in FY07E, and from the transformer segment which is expected to grow at a CAGR of 48% over FY07-09E to clock revenues of Rs10,532 mn.

Increasing share of Transformers and EPC (LHS) and Stabilising Margins (RHS)



Source: Company, Emkay Research

Valuation

We expect EMCO's revenues to grow at a CAGR of 50% over FY07-09E to reach Rs16,161 mn in FY09E. The EBITDA would improve from Rs865 mn in FY07 to Rs2,104 mn in FY09E, registering a CAGR growth of 56%. We believe that the company's EBITDA margin would improve from 13.2% for FY07 to 14.3% for FY09E.

At its current price of Rs779, EMCO is trading at 11.7x its FY08E earnings and 9.2x its FY09E earnings of Rs66.7 and Rs85.1 respectively; and EV/EBITDA of 6.9x FY08E and 5.2x FY09E.

We have valued EMCO on a sum-of-the-parts (SOTP) basis, based on our FY09E estimates.

We have valued the core business, which includes transformers and energy meters, and its EPC business on a P/E of 12x its FY09E earnings per share. We have added the FY09E cash balance and the estimated equity investment in EMCO Energy.

Valuation (Rs per share)

Operational Area	Value / Share (Rs)	Remarks
Core Business	1,021	P/E of 12x FY09E EPS
Investment in EMCO Energy	54	Valued at FV of equity investment
Target Price	1,076	

source: Emkay Research

We initiate coverage on EMCO with a BUY rating and a target price of Rs1,076, an upside of 38% from the CMP of Rs779.

Profit & Loss Statement

Mar end (Rs mn)	FY06	FY07	FY08E	FY09E
Net Sales	4,054	6,558	11,882	14,706
Growth %	71.8	61.8	81.2	23.8
Raw Material Consumption	3,068	5,019	9,259	11,438
As a % to Net Sales	75.7	76.5	77.9	77.8
Power & Fuel	22	0	63	78
As a % to Net Sales	0.5	0.0	0.5	0.5
Staff Cost	139	202	262	302
As a % to Net Sales	3.4	3.1	2.2	2.1
Other Expenses	367	294	662	785
As a % to Net Sales	9.0	4.5	5.6	5.3
Total Exp	3,595	5,515	10,246	12,602
EBIDTA (Core)	459	1,044	1,636	2,104
EBIDTA (%)	11.3	15.9	13.8	14.3
Other Income	8	1	2	3
Depreciation	57	60	104	139
EBIT	410	985	1,534	1,967
Interest	126	198	279	366
PBT	284	787	1,255	1,601
Tax	93	203	452	576
ETR (%)	32.8	25.8	36.0	36.0
A PAT	191	584	803	1,025

Source : Company, Emkay Research

Balance Sheet

Mar end (Rs mn)	FY06	FY07	FY08E	FY09E
Equity Capital	85	108	120	120
Reserves & Surplus	1,257	2,888	4,886	5,875
Networth	1,342	2,997	5,007	5,995
Total Debts	1,063	1,850	2,800	3,300
Net deferred liab	71	71	71	71
Capital Employed	**2,476**	**4,918**	**7,878**	**9,367**
Gross Block	1,078	1,278	2,578	2,578
Less Depreciation	(484)	(544)	(648)	(787)
CWIP	1	300	0	0
Net Fixed Assets	595	1,034	1,930	1,791
Investments	10	10	253	860
Inventory	1,071	1,617	2,930	3,223
Debtors	2,144	3,234	4,883	6,043
Cash and Bank	82	847	1,161	1,477
Loans & Advances	249	359	651	806
Total Curr. Assets	3,546	6,058	9,625	11,549
Current Liabilites	1,643	2,142	3,855	4,741
Provisions	32	42	75	92
Total Curr. Liabilities	1,675	2,184	3,930	4,834
Net Current Assets	1,871	3,874	5,695	6,716
Total Assets	**2,476**	**4,918**	**7,878**	**9,367**

Source : Company, Emkay Research

Cash Flow

Mar end (Rs mn)	FY06	FY07	FY08E	FY09E
PBT	284	609	1,255	1,601
Depreciation	57	60	104	139
Net Chg in WC	(600)	(1,239)	(1,507)	(705)
Others	(121)	(197)	(448)	(573)
Cash from Operations	(380)	(767)	(596)	463
Capex	(37)	(499)	0	(0)
Net Investments made	(4)	0	(243)	(608)
Others Investing Activities	0	0	0	0
Cash from Investing	(41)	(499)	(243)	(608)
Change in Share capital	465	1,282	243	(0)
Change in Debts	(106)	787	950	500
Div. & Div Tax	(29)	(37)	(42)	(42)
Others	0	(1)	2	2
Cash from Financing	331	2,031	1,153	460
Total Cash Generated	(91)	764	314	316
Cash Opening Balance	173	82	847	1,161
Cash Closing Balance	82	847	1,161	1,477

Source : Company, Emkay Research

Ratios

Mar end	FY06	FY07	FY08E	FY09E
EBIDTA - Core (%)	11.3	15.9	13.8	14.3
EBIT (%)	10.1	15.0	12.9	13.4
NPM (%)	4.7	8.9	6.8	7.0
Adj ROCE (%)	12.5	14.5	15.3	14.5
Adj ROE (%)	18.4	18.7	20.1	18.6
ROIC (%)	14.9	21.9	24.5	20.3
Adj EPS (Rs)	22.5	37.4	66.7	85.1
Cash EPS (Rs)	29.1	42.9	75.3	96.7
Book Value (Rs)	158.0	276.2	415.7	497.8
DPS (Rs)	3.0	3.0	3.0	3.0
Payout (%)	15.3	9.2	5.2	4.1
Debt Equity (x)	0.8	0.6	0.6	0.6
PE (x)	35.0	20.8	11.7	9.2
P/BV (x)	5.0	2.8	1.9	1.6
EV/Sales (x)	1.9	1.4	0.9	0.8
EV/EBITDA Core (x)	16.7	10.9	6.7	5.3
Div Yield (%)	0.4	0.4	0.4	0.4

Source : Company, Emkay Research

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Emkay Research

25 June, 2007

Indo-Tech Transformers

Initiating

Capacity growth to drive business

Indo Tech Transformers (ITTL) is increasing its capacity to 7,450MVA by October 2007. This would enable the company to have a healthy product mix and more importantly help the company substantially improve its order flow. We estimate that the company's revenues would grow to Rs3,576 mn by FY09E registering a CAGR of 52% over FY07-09E, while its earnings would grow at a compounded rate of 33% over the same period to Rs42.3. We recommend a BUY on ITTL as we believe that on a P/E of 12x FY09E earnings of Rs42.3, the company would trade at Rs508, an upside of 29%.

Buy

Price	Target Price
Rs 393	**Rs 508**

Sensex - 14,467

Price Performance

(%)	1M	3M	6M	12M
Absolute	7	48	59	137
Rel. to Sensex	6	36	48	68

Source: Bloomberg

Stock Details

Sector	Power Equipment
Reuters	INTT.BO
Bloomberg	INDT@IN
Equity Capital (Rs mn)	106
Face Value (Rs)	10
52 Week H/L(Rs)	399/129
Market Cap (Rs bn)	4.2
Daily Avg Volume (No of shares)	75969
Daily Avg Turnover (US$ mn)	0.6

Shareholding Pattern (%)

(31st Mar.'07)

Promoters	54.4
FII/NRI	13.6
Institutions	5.1
Private Corp./Others	10.9
Public	16.1

Source: Capitaline

Aggressive capacity addition to boost revenues

ITTL's capacity would increase to 7,450MVA by October 2007 from 2,450 MVA at the end of FY06 and 3,450MVA at end of FY07E. We believe that after completing all its capacity expansion programmes, the company would have a healthy capacity mix of distribution, power and dry type transformers which would enable it to achieve well balanced growth.

ITTL is well poised to leapfrog to a new level with a 52% CAGR growth in revenues to Rs3,576 mn in FY09E. We expect the Adj PAT to grow from Rs254 mn in FY07 to Rs449 mn in FY09E, a CAGR of 33%. The lower Adj PAT growth is on account of its initial establishment costs which would stabilise after FY09E, the first full year of its expanded capacity in operation.

We expect that the company to benefit from the expected 67,900MW generation capacity addition plan in India in the next five years. ITTL would also benefit from the demand for distribution transformers generated from the rural electrification program.

Order book size is increasing

ITTL's order book of Rs1,600 mn is skewed towards power transformers which constitute 80% of the total orders. 75% of ITTL's order book is for sales to state-owned organisations. This insulates it substantially from raw material price vagaries. We believe the focus on sales to state-owned utilities would continue to drive the growth in the business. We believe that the increased capacity would enable the company to increase its order intake and order book to around Rs3,000 mn by the end of FY08E.

EBITDA Margins to stabilise at around 19%-20%

We estimate that ITTL's EBITDA margins would stabilize at 19%-20% levels, with FY07 EBITDA margins of 24.3% being an aberration on account of few high margin orders being executed in H2FY07.

Valuations

We believe that ITTL's EPS would grow at a CAGR of 33% over FY07-09E to Rs42.3.in FY09E, while its revenues would grow at a CAGR of 52% over the same period to Rs3,576 mn. Given the high revenue and profit growth along with a 150bps EBITDA margin expansion (FY07 being an aberration), we value the company at a P/E of 12x its FY09E earnings of Rs42.3. We initiate coverage on ITTL with a BUY recommendation with a price target of Rs508, an upside of 29% from the current levels of Rs393.

Key financials

	Net Sales (Rs. mn)	EBITDA (Rs. mn)	EBITDA (%)	Adj PAT (Rs. mn)	EPS (Rs.)	EPS Growth(%)	RoCE (%)	P/E (x)	EV / EBITDA(x)
FY06	973	176	18.1	110	10.4	-64.5	23.1	21.0	9.8
FY07	1,557	378	24.3	254	23.9	131.0	29.9	16.4	10.3
FY08E	2,496	477	19.1	313	29.4	23.2	28.1	13.3	8.3
FY09E	3,576	700	19.6	449	42.3	43.7	30.5	9.3	5.3

Company Background

Indo Tech Transformers Limited established in 1976, is an ISO 9001 certified company. The company began by manufacturing small distribution transformers and was a regional player. In 1994, the company tied up with Allied Signals, USA to manufacture allied metal core distribution transformers; and commenced manufacturing mobile transformers in 1998. Indo Tech Electric Company Ltd was merged with the company in 2005, prior to the IPO.

Investment Thesis - Capacity ramp-up to fuel growth

Capacity Expansion Spree

Capacity up 3x in 2 years …

By October 2007, Indo Tech Transformer's capacity would increase to 7,450MVA from 3,450MVA at end FY07E and 2,450 MVA at the end of FY06.

… from

2,450MVA in FY06

to 3,450MVA in FY07

and finally to

7,450MVA in FY08

Indo Tech Transformers Ltd (ITTL) embarked on an expansion spree in early FY06. It had initially planned to increase its capacity from 2,450MVA to 5,250MVA which has subsequently been further scaled up to 7,450MVA. Of this increase of 5,000MVA, 1,000MVA of incremental capacity has already been implemented while the balance 4,000MVA would be implemented at their Kancheepuram plant.

The company has shut down its 450MVA capacity plant at Saidapet and has moved the equipment to its Thirumazhisai facilities with an expanded capacity of 750MVA. This expansion was completed in October 2006 at a cost of Rs65 mn as against the planned investment of Rs75 mn.

Indo Tech Transformers' commissioned its 200MVA distribution transformer manufacturing facility at Palakkad in September 2006. The company has also completed expanding its power transformer manufacturing facility at Thirumazhisai from 1,800MVA to 2,400MVA during the same period.

We estimate that this capacity expansion would be able to generate higher revenues in FY09E on account of them being operational for the full year and the order to deliver cycle being settled so as to ensure continuous operations. We expect Indo Tech Transformers to continue to derive a larger proportion of its sales from state-owned power generators, especially with a huge 67,900MW of generation capacity expected (as against 110,577MW planned capacity addition) in the next five years.

Indo Tech Transformers is also likely to commission its 100MVA dry type transformer plant by the first fortnight of June 2007. The company has already manufactured a prototype transformer and has sent the same for testing and verification to external agencies. We believe that this would enable the company to tap this high growth segment in which its competitors already have a strong foothold.

Location and Capacity

Location	Facility	Capacity (MVA)	Capex(Rs mn)	Status
Thirumazhisai	Power Transformer	2,400	36.5	Capacity increased from 1,800MVA
	Distribution Transformer	750	65.0	400MVA Saidapet plant shifted to this location and capacity increased by 350MVA. Operational since Oct '06
	Dry Type Transformer	100	15.0	Prototype manufactured. To be commissioned in first fortnight of July 2007
Palakkad	Distribution Transformer	200		Existing operational facility
Operational Capacity		3,450	116.5	
Kancheepuram *	Power Transfromer	4,000	486.0	To be commissioned in Oct '07
Installed Capacity		7,450	602.5	

source: Company, Emkay Research, estimated capital expenditure*

Locational capacity … all capacities in Tamil Nadu

We believe that the company would commission its new plant for manufacturing distribution transformers by October 2007. This 4,000MVA plant is expected to cost around Rs486 mn. We estimate that on a full year basis this plant would operate at 35% capacity level in FY08E.

We believe that this capacity expansion spree would enable Indo Tech Transformers to achieve critical mass in terms of size and product mix and hence the company's revenues would grow at a CAGR of 52% over FY07-09E to Rs3,576 mn.

Thus, after the completion of all the capacity expansion programmes, the company would have a healthy capacity mix of distribution, power and dry type transformers.

Power transformers – more capacity, higher ratings

Increased capacities for power transformers to cater to the demand from new power plants

Indo Tech Transformers increased its capacity to manufacture power transformers from 1,800MVA to 2,400MVA. The company also upgraded the power transformers facility to manufacture 220kV class of transformers. This, we believe, would enable the company to cater to the increasing demand in this segment, especially the 220kV transmission segment.

Though the new plant would be capable of manufacturing transformers of 400kV class, we believe that the company would not be able to commence sales of these higher rated transformers on account of the time taken for pre-qualifications in this particular product line. We estimate that till this occurs, in FY09E, the company would utilize the facility to manufacture 132kV and 220kV transformers.

Dry type transformers – better late than never

New entrant into the power transformers segment

The company would be making a small beginning in the dry-type transformers segment. The key applications of this type of transformer are in areas of fire hazard and where space is a constraint. We believe that though Indo Tech Transformers is a late entrant in this segment, the increasing demand and its focus on the southern region would enable it to ramp up utilisations fast. We believe that this plant would operate at a capacity utilisation of 80% in FY08E.

Funding capex through a judicious mix

CapEx funded through a judicious mix of debt and equity …

We believe that the company would not require any further equity dilution or need to raise debt to fund its capital expenditure plan. We estimate that the company's internal accruals and the current debt of around Rs45 mn would be sufficient to fund its capital expenditure programme. In addition, the IPO proceeds earmarked for the capacity expansion programme would also be utilised.

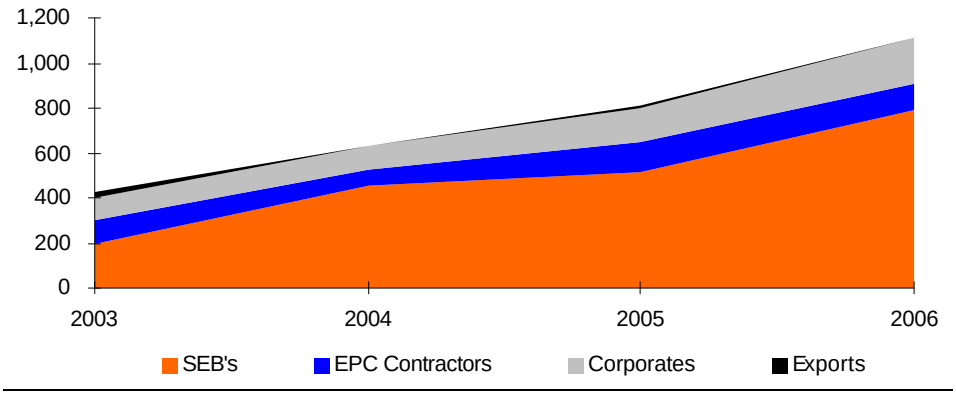
FInancials

Increasing order book size to translate into higher revenue growth

Order book size to increase from Rs1,600 mn to Rs3,000 mn by end FY08

The present order book of Indo Tech Transformers is Rs1,600 mn which is skewed towards the higher rating power transformers which constitutes 80% of the total orders, while the balance 20% is for distribution transformers. The company's focus on sales to state-owned electricity utilities continues, with these representing 75% of the pending order book.

Customer Mix (Rs mn)



Source: Company, Emkay Research

We believe that the company's focus on sales to state-owned utilities would continue to drive the growth in the business, with corporate sales increasing at a faster clip as the sales of dry type transformers starts from FY08E, albeit in a small way with a 100MVA capacity plant. The company's capacity would more than double from 3,450MVA to 7,450MVA by October 2007.

We believe that this would enable the company to increase its order intake and order book to around Rs3,000 mn by the end of FY08E. Our estimates are based on the increased production capacity on account of the 4,000MVA distribution transformer facility becoming operational and the company bidding for an increasing number of tenders.

EBITDA Margins to stabilise at around 19%-20%

EBITDA margins to be sustained at 19%-20% ….

We believe that the EBITDA margin of Indo Tech Transformers would stabilize at 19%-20% levels over the next two years. We believe that the company would be able to post incremental EBITDA margin gains of around 150bps each year over FY06-09E.

We have excluded FY07 EBITDA margin of 24.3% as we believe that this was an aberration on account of a few high margin order received meet the 10th five year plan targets and we do not expect these margins to be sustainable.

Valuations

We believe that Indo Tech Transformers is well poised to leapfrog to a new level with a 45% CAGR growth in revenues to Rs3,576 mn in FY09E from Rs1,557 mn in FY07. We expect that the company's Adj PAT would grow from Rs254 mn in FY07 to Rs449 mn in FY09E, a CAGR of 33%. This, we estimate, is on account of its initial establishment costs being higher in the first two years of the new plant being operational. FY09E would be the first full year of the new plant and we expect these expenses to stablise post-FY09E.

While on an EV / EBITDA basis, Indo Tech Transformers is trading at 5.3x its FY09E values, on a P/E valuation the company is trading at 9.3x its FY09E EPS of Rs42.3. We have valued the company at 12x its FY09E earnings, resulting in a value of Rs508, an upside of 29% from its current market price of Rs393.

Profit & Loss Statement

Mar end (Rs mn)	FY06	FY07	FY08E	FY09E
Net Sales	973	1,557	2,496	3,576
Growth %	37%	60%	60%	43%
Raw Material Consumption	648	1,028	1,793	2,601
As a % to Net Sales	66.6	66.1	71.8	72.8
Power & Fuel	6	0	0	0
As a % to Net Sales	0.6	0.0	0.0	0.0
Staff Cost	25	36	54	60
As a % to Net Sales	2.6	2.3	2.2	1.7
Other Expenses	118	115	172	215
As a % to Net Sales	12.2	7.4	6.9	6.0
Total Exp	797	1,179	2,019	2,876
EBIDTA (Core)	176	378	477	700
EBIDTA (%)	18.1	24.3	19.1	19.6
Other Income	8	33	33	33
Depreciation	9	12	18	28
EBIT	176	399	491	705
Interest	7	3	3	3
PBT	168	395	489	702
Tax	58	141	176	253
ETR (%)	34.7	35.8	36.0	36.0
APAT	110	254	313	449

Source : Company, Emkay Research

Balance Sheet

Mar end (Rs mn)	FY06	FY07	FY08E	FY09E
Equity Capital	106	106	106	106
Reserves & Surplus	607	826	1,114	1,538
Networth	714	932	1,220	1,644
Total Debts	20	45	45	45
Net deferred liab	16	0	0	0
Capital Employed	**750**	**977**	**1,265**	**1,689**
Gross Block	181	204	690	690
Less Depreciation	(70)	(81)	(99)	(127)
CWIP	23	95	0	0
Net Fixed Assets	134	218	591	563
Investments	113	113	113	113
Inventory	125	320	513	735
Debtors	226	426	410	588
Cash and Bank	480	202	133	407
Loans & Advances	138	138	138	138
Total Curr. Assets	968	1,086	1,194	1,868
Current Liabilites	346	320	513	735
Provisions	121	121	121	121
Total Curr. Liabilities	466	440	633	855
Net Current Assets	502	646	560	1,013
Total Assets	**750**	**977**	**1,265**	**1,689**

Source : Company, Emkay Research

Cash Flow

Mar end (Rs mn)	FY06	FY07	FY08E	FY09E
PBT	168	395	489	702
Depreciation	9	12	18	28
Net Chg in WC	44	(421)	16	(178)
Others	(60)	(158)	(176)	(253)
Cash from Operations	160	(172)	347	300
Capex	(37)	(95)	(391)	(0)
Net Investments made	(113)	0	0	0
Others Investing Activities	311	(11)	0	0
Cash from Investing	161	(106)	(391)	(0)
Change in Share capital	78	0	0	0
Change in Debts	(1)	25	0	0
Div. & Div Tax	(24)	(25)	(25)	(25)
Others	0	0	0	0
Cash from Financing	53	(0)	(25)	(25)
Total Cash Generated	375	(278)	(69)	275
Cash Opening Balance	105	480	202	133
Cash Closing Balance	480	202	133	408

Source : Company, Emkay Research

Ratios

Mar end	FY06	FY07	FY08E	FY09E
EBIDTA - Core (%)	18.1	24.3	19.1	19.6
EBIT (%)	17.2	23.5	18.4	18.8
NPM (%)	11.2	16.0	12.4	12.5
Adj ROCE (%)	23.1	29.9	28.1	30.5
Adj ROE (%)	23.1	30.9	29.1	31.4
ROIC (%)	887.9	105.8	41.5	47.0
Adj EPS (Rs)	10.4	23.9	29.4	42.3
Cash EPS (Rs)	11.2	25.0	31.1	44.9
Book Value (Rs)	67.2	87.8	114.9	154.8
DPS (Rs)	2.0	2.0	2.0	2.0
Payout (%)	19.3	8.4	6.8	4.7
Debt Equity (x)	0.0	0.0	0.0	0.0
PE (x)	21.0	16.4	13.3	9.3
P/BV (x)	3.2	4.5	3.4	2.5
EV/Sales (x)	1.8	2.5	1.6	1.0
EV/EBITDA Core (x)	9.8	10.3	8.3	5.3
Div Yield (%)	0.9	0.5	0.5	0.5

Source : Company, Emkay Research

Annexure 1 - About Transformers

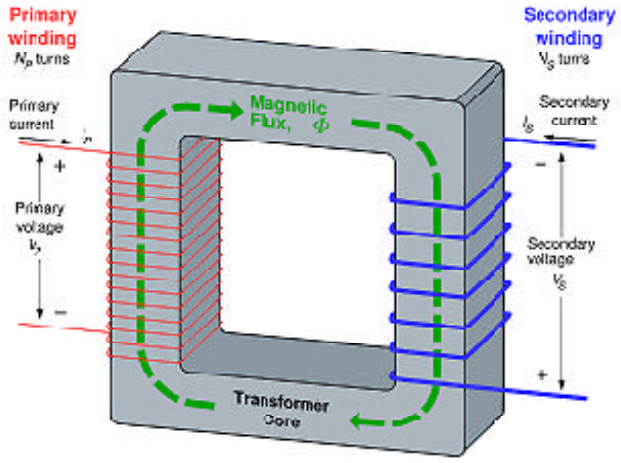
What is a transformer?

A transformer is a device which changes the voltage of electricity that passes through it. The change can be from lower to higher voltage, as in a step up or power transformer; or from a higher voltage to lower voltage as in a step down and distribution transformers.

A transformer usually consists of at least two coupled windings in which energy is transferred from one winding to another without any relative motion of the parts of the transformer. The quality of a transformer is determined mainly by the on load losses, which is the loss of electricity due to the transformation from higher to lower voltage or visa versa.

A basic transformer consists of two sets of coils or windings. Each set of windings is simply an inductor. AC voltage is applied to one of the windings, called the primary winding. The other winding, called the secondary winding, is positioned in close proximity to the primary winding, but is electrically isolated from it. The alternating current that flows through the primary winding establishes a time-varying magnetic flux, some of which links to the secondary winding and induces a voltage across it. The magnitude of this voltage is proportional to the ratio of the number of turns on the primary winding to the number of turns on the secondary winding. This is known as the "turns ratio." To maximize flux linkage with the secondary circuit, an iron core is used to provide a low-reluctance path for the magnetic flux.

If there are more turns in the secondary winding than in the primary windings, the output voltage will be greater than that of the input voltage as in the case of a step-up transformer. Conversely, if the secondary has less turns than primary, the output voltage will be lower than that of the input voltage as in the case of a step-down transformer.



The above description of transformers pertains to single-phase transformers. Single-phase means two power lines as an input source. Therefore, only one primary and one secondary winding is required to accomplish the voltage transformation. However, most power is distributed in the form of three-phase AC. Power generators produce electricity by rotating three coils or windings through a magnetic field within the generator. Thus, a three-phase transformer actually has six windings (or coils) - three primary and three secondary. These coils or windings are spaced 120 degrees apart. As they rotate through the magnetic field they generate power, which is sent out on three lines as in three-phase power.

Three-phase electricity powers large industrial loads more efficiently than single-phase electricity. When single-phase electricity is needed, it is available between any two phases of a three-phase system, or in some systems, between one of the phases and the ground. By the use of three conductors, a three-phase system can provide 173% more power than two conductors of a single-phase system. Three-phase power allows heavy duty industrial equipment to operate more smoothly and efficiently. Three-phase power can be transmitted over long distances with a smaller conductor size.

What are the different types of transformers and what are their key uses?

There are multiple classifications for transformers, as outlined below:

Transformer Classifications

Classification Based on	Based on
Power Level	Fraction of a volt-ampere (VA) to over 1,000MVA
Application	Power supply, circuit isolation
Frequency Range	Power, audio, radio frequency
Voltage Class	Few volts (V) to 765kV and 800kV
Cooling Type	Air cooled, oil filled, water cooled, etc
Purpose	Distribution, rectifier, arc furnace, etc

source: Industry

By ratio of the number of turns in the coils

- Step-up: The secondary has more turns than the primary
- Step-down: The secondary has fewer turns than the primary

Thus, a step-up or step-down transformer can be oil-cooled of, say 132kV voltage class.

Power Sector Value Chain and corresponding Transformer Class Used

Stage	Voltage Class
Power Plant – Generating Station	11 / 21 kV
Step Up Power Transformer	765 / 400 / 220 / 132 kV
Receiving Substation	765 / 400 / 220 / 132 kV
Step Down Power Transformer	132 / 66 / 33 kV
Distribution Transformer	33 / 22 / 11 / 6.6 / 3.3 / /2.2 / 1.1 kV
End User	220 v (2.2 kV)

source: Emkay Research

How is a Transformer Made?

Following are the major activities for manufacturing of Transformer: -

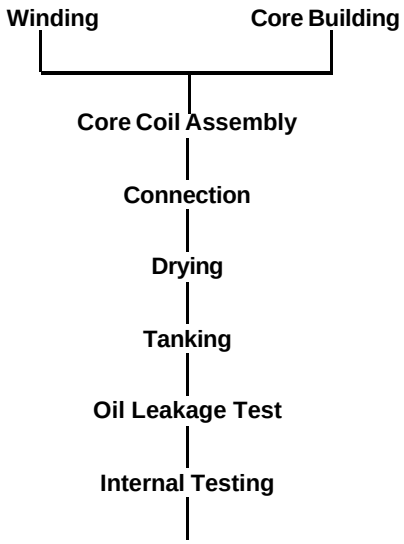
Design

All transformers are made based on specification supplied by the procurer. On receipt of the customer order, the designing of the transformer is started. The customer specific transformer drawings are submitted for approval. On approval, the drawing and bill of material are issued to various departments to carry out further work as per design.

Core Building

The core of a transformer is made of cold rolled grain oriented (CRGO) steel, also known as lamination. Usually pre-cut laminations per each specific order are procured. The core is built by stacking these lamination sheets one over the other and tightening the core with a frame using tie rods and core bolts. The core is then lifted and kept vertically for assembling the coils.

Broad Manufacturing Process of a Transformer



source: Industry, Emkay Research

Winding

Windings are made up of electrolytic grade copper strips or copper wires or enamel copper or copper foils with inter layer of insulations made of either paper or fibre glass. The use of specific material is dependent on the type of transformer and design. The winding is circularly wound on wooden formers with dimensions maintained as per the customers' design. These windings are kept in drying oven and are heated at pre-set temperature to remove the moisture from the insulation material.

In case of Resin Impregnated Dry Type transformers, the windings are kept in impregnation chamber for resin impregnation. After completion of impregnation cycle windings are kept in oven for curing. In case of Cast Resin Dry Type transformers, windings are kept in casting chamber for resin casting. After completion of casting process, windings are kept in oven for curing.

Core Coil assembly

The central part of a transformer, called the yoke in industry parlance, is made of cold rolled grain oriented (CRGO) steel. CRGO steel is also known as lamination. These lamination sheets are either bought pre-cut as per requirements or are cut by the transformer manufacturer as per the design requirement. The core assembly is built by stacking the lamination sheets one above the other and tightened together which is then fitted to the core and core coils. This entire assembly is lifted with the help of cranes and kept vertically for the coil assembly.

Connection

The core coil is kept in the drying oven for shrinking the insulation material, after which the connections are made, again as per the design requirements. These connections are made of copper. Tapings from the windings are also connected to offload / onload tap changers. Once the connections are completed, the transformer is put through various electrical tests to ensure that the transformer is as per the design.

Drying

The core and the coil assembly are either air dried or dried through vacuum oven. The oven temperature and the duration of heating are determined based on the transformer rating. Drying is required to ensure that all the moisture absorbed by the core and the coil assembly is dried.

Tanking

Tanks are first fabricated based on the design, and then painted on the inside with oil and heat resistant paint. The dried core and coil assembly is then moved from the drying oven and placed inside the tank. The tank is then closed and transformer oil is filled in the tank through special machines under vacuum though a process knowing as filling. This process is not undertaken for dry-type transformers. Once the transformer oil is filled, the transformer is then put though some more tests to ensure that there is no oil leakage.

Completion of Transformer

The completed transformer is then tested electrically as per standards, and painted on the outside as per customer requirements. The transformer is now ready for dispatch.

The time taken to manufacture a transformer would vary based on its type and rating. A distribution transformer takes around two to three months, while a medium power transformer takes three to four months for manufacturing. A large power transformer usually takes six to eight months to manufacture.

Annexure 2 - Key raw material scenario

Key Raw Materials

Copper and lamination (CRGO) are the key raw materials

The key raw materials used in the manufacture of a transformer are copper, cold rolled grain oriented (CRGO) steel or lamination. These key raw materials account for about 70% of the total raw material expenditure.

We believe that increases in the prices of the key raw materials are not a major cause of concern as all sales to the government owned utilities have a price escalation clause built in to the contracts. While sales to industry do not have any price variation clause, this may not be a major concern as industrial demand is only a fraction of the overall demand for transformers.

Estimated Cost and Quantity in Transformer Manufacturing

Raw Material	Unit	Quantity (ton / KL)	% of net sale	Average Cost(per ton / litre)
Copper	MT	3.5	20-25	~ US$6,800
CRGO / Lamination	MT	8.7	27-35	~ US$4,500
Transformer Oil	KL	11.0	5-7	Rs35,000-40,000
MS Steel	MT	8.5	15-18	US$525-550
Total			65-75	

source: Industry, Emkay Research

Copper

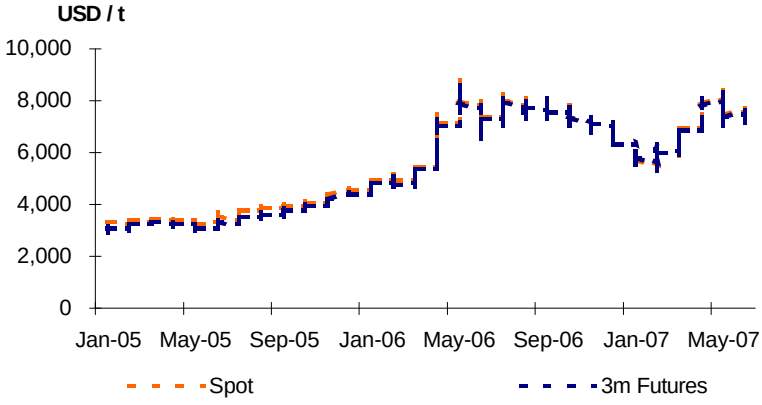
High volatility in copper prices in the past two years …

has not affected the margins of the players

Electrolytic grade copper is used in a transformer to make the windings. The number of windings determines the voltage class and rating of the transformer, while the quality of copper used is a major factor in controlling the transformation losses in a transformer.

In the past 12 to 24 months the prices of copper have witnessed a sharp rise. This rise in copper prices had begun to reverse to some extent, before rising again. Copper prices have see-sawed from a level of USD 3,270 per ton in January 2005 to a high of USD 8,800 per ton in May 2006 and then to lower levels of USD 5,432 per ton in February 2007 and back to USD 6,767 per ton. The key factors affecting the prices of copper are the inventory levels and price elasticity of demand for copper.

Copper Spot and Futures Price Trend on LME



source: Bloomberg, LME

The major suppliers of copper to the Indian transformer industry are Sterlite Industries, Hindustan Copper, and Birla Copper.

The price of copper, which constitutes 30% to 38% of the raw material expenditure for Emkay's universe, is expected to rise at a steady rate over the next two years. We believe that this trend would not affect the margins of the companies under Emkay's coverage, since most of the sales are on the back of orders with price variation clauses.

Cold Rolled Grain Oriented (CRGO) steel or lamination

CRGO steel, or lamination, is not manufactured in India. All the players thus have to necessarily source their requirements from the international market though MMDC.

Few suppliers of lamination (CRGO) worldwide resulting in a sellers' market

This is another key raw material which constitutes around 35% of the total raw material expenditure of the industry, with the range of 35% to 56% for Emkay's universe of transformer manufacturers.

The key manufacturers of CRGO steel are Thyssen, Germany; Nippon Steel, Japan; POSCO, Korea; British Steel, UK; AST, Italy; Tata Steel-Corus, UK and Acesita, Brazil.

The Indian Transformer Manufacturers Association (ITMA) estimates that the global production capacity is 1.7 mn tonnes, and that the demand-supply gap is around 0.21 mn tonnes for lamination; with China estimated to consume 45% and India at 7% of the global production.

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Emkay Rating Distribution

BUY	Expected total return (%) of stock price appreciation and dividend yield) of over 25% within the next 12-18 months.
ACCUMULATE	Expected total return (%) of stock price appreciation and dividend yield) of over 10% within the next 12-18 months.
REDUCE	Expected total return (%) of stock price appreciation and dividend yield) of below 10% within the next 12-18 months.
SELL	The stock is believed to under perform the broad market indices or its related universe within the next 12-18 months.
NEUTRAL	Analyst has no investment opinion on the stock under review.