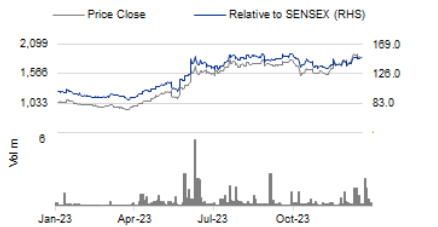


India

ADD (no change)

Consensus ratings*:	Buy 4	Hold 1	Sell 0
Current price:	Rs1,870		
Target price:	Rs2,462		
Previous target:	Rs2,462		
Up/downside:	31.7%		
InCred Research / Consensus:	8.0%		
Reuters:	HEG IN		
Bloomberg:	HEG IN		
Market cap:	US\$868m		
	Rs72,177m		
Average daily turnover:	US\$7.3m		
	Rs609.8m		
Current shares o/s:	38.6m		
Free float:	44.2%		
*Source: Bloomberg			



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	8.1	5.2	77.3
Relative (%)	4.8	(3.6)	47.4

Major shareholders	% held
Promoter & Promoter Group	55.8
FII	6.2
Insurance Companies	4.8

HEG Limited

Graphite anode biz to be a gamechanger

- Graphite is a critical mineral used in the anode for lithium-ion (LiB) batteries. 1 GWh of LiB requires 1.2kt of graphite (natural or synthetic).
- However, our analysis suggests that natural graphite cannot improve its current market share of 20% in the anode market by CY30F.
- Synthetic graphite anode will remain the market leader due to its ability of a quick ramp-up. We remain positive on HEG with a target price of Rs2,462.

There are two ways to make graphite anode - natural and synthetic

1kWh of typical lithium-ion battery storage requires ~1.2kg of graphite. Despite being one of the most abundant elements, graphite still has a scaling issue. Two types of graphite are used in lithium-ion batteries – naturally-mined flake graphite processed into spheres, and synthetic graphite produced from petroleum coke and tar pitch at a very high temperature. Synthetic graphite anode production can be over four times more carbon-intensive than natural graphite anode production, as due to its usage of energy and fossil fuels as a feedstock, it needs needle coke as one of the raw materials.

Natural anode can't displace synthetic anode's leadership

We have graphite mine production data from CY94. Over a period of 29 years, graphite mine production has shown a CAGR of only 2%. Anyway, new mines take time to start production, and, on an optimistic note, we expect this CAGR to be 6% till CY30F. For CY22, the annual mine production of graphite was 1,300,000tpa. Out of this, flaky graphite production was close to 1,200,000tpa. However, we must understand that the raw material feedstock for a natural graphite anode is mined flake graphite. This is then separated by size, with the small-to-medium mesh material being the optimal size for battery material processing. The material at this mesh size represented only 49% of the total global market of 1.2mt of flake graphite i.e. close to 0.6mt. On performing an analysis, we realized that even if the natural graphite production posts a CAGR of 8%, which is a very optimistic estimate as in various studies it has been found that rarely metals grow at a CAGR of more than 6%, there will be natural graphite shortage by FY27F. Hence, synthetic graphite will continue to hold market leadership in this space.

HEG to remain cost competitive with China; retain ADD rating

HEG to set up a 20,000t graphite anode manufacturing capacity, which is likely to be operationalized by FY26F. Power remains the key input material for graphite anode manufacturing, as it accounts for 50-60% of the cost. Power cost in inner Mongolia is Rs 5.93/unit and the same for HEG is Rs5.5/unit and thus, slightly cheaper. Moreover, PLI incentive from the Indian government in battery storage mandates battery makers to do 60% of their value addition in India if they want to be eligible for the incentives. Currently, 30GWh of battery PLIs have been approved, which means roughly 30,000t of battery anode material is required. HEG is likely to cater to most of it. Retain ADD rating with a target price of Rs2,462. Downside risk: Execution delay in the graphite anode plant project.

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Financial Summary

	Mar-22A	Mar-23A	Mar-24F	Mar-25F	Mar-26F
Revenue (Rsm)	22,016	24,672	21,036	29,442	34,914
Operating EBITDA (Rsm)	5,272	6,197	7,363	11,188	13,267
Net Profit (Rsm)	3,906	4,555	4,970	7,421	8,852
Core EPS (Rs)	101.2	118.0	128.8	192.3	229.3
Core EPS Growth	215.8%	16.6%	9.1%	49.3%	19.3%
FD Core P/E (x)	18.48	15.85	14.52	9.73	8.15
DPS (Rs)	3.1	39.9	31.1	31.1	31.1
Dividend Yield	0.17%	2.13%	1.66%	1.66%	1.66%
EV/EBITDA (x)	13.80	11.73	10.04	6.07	4.48
P/FCFE (x)	(171.74)	186.42	14.32	1,451.24	97.46
Net Gearing	1.8%	1.3%	3.7%	(7.2%)	(18.1%)
P/BV (x)	1.91	1.69	1.45	1.22	1.03
ROE	10.9%	11.3%	10.7%	13.6%	13.7%
% Change In Core EPS Estimates					
InCred Research/Consensus EPS (x)					

SOURCE: INCRED RESEARCH, COMPANY REPORTS

Mathematical model to project graphite demand and supply ➤

We have graphite mine production data from CY94. Over a period of 29 years, graphite mine production has shown a CAGR of only 2%. However, there has been a slight ramp-up in its production in recent years. But still, new mines take time to start operations and on an optimistic note, we expect this CAGR to be 6% till CY30F. For CY22, the annual mine production of graphite was 1,300,000tpa. Out of this, flaky graphite production was close to 1,200,000tpa. But we must understand that the raw material feedstock for a natural graphite anode is mined flake graphite. This is then separated by size, with the small-to-medium mesh material being the optimal size for battery material processing. The material at this mesh size represented only 49% of the total global market of 1.2mt for flake graphite i.e. close to 0.6mt. On performing an analysis, we realized that even if natural graphite production posts a CAGR of 8%, which is a very optimistic estimate as in various studies it has been found that rarely metals grow at a CAGR of more than 6%, plus natural graphite has a 30-year CAGR of only 2%, and so there will be natural graphite shortage by FY27F. Hence, in our view, natural graphite will maintain or marginally improve its market share of 20% in battery anode materials.

Figure 1: Market balance for natural graphite, provided its production grows at a CAGR of 8% and maintains current market share of 20%

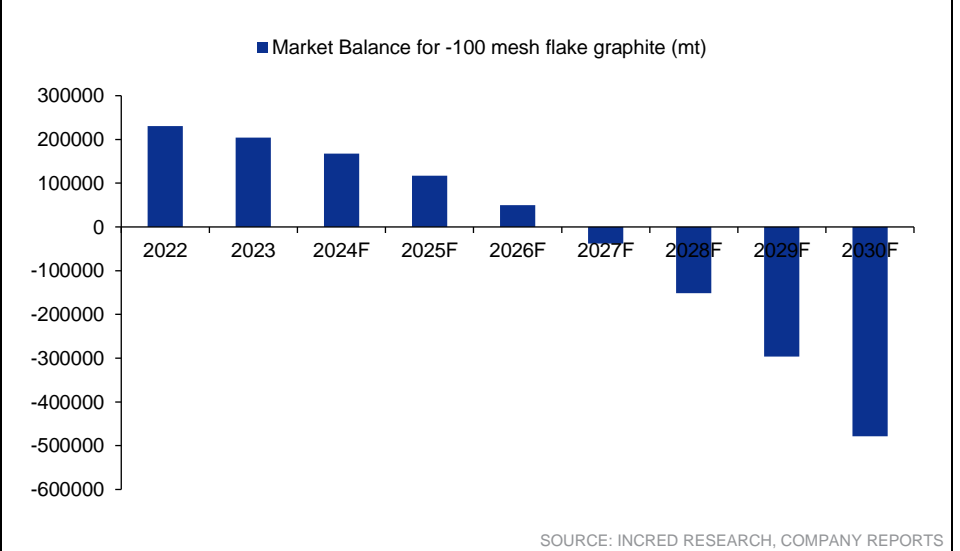


Figure 2: There will be sufficient natural graphite by CY30F only if the production grows at a CAGR of 14%, which doesn't look probable

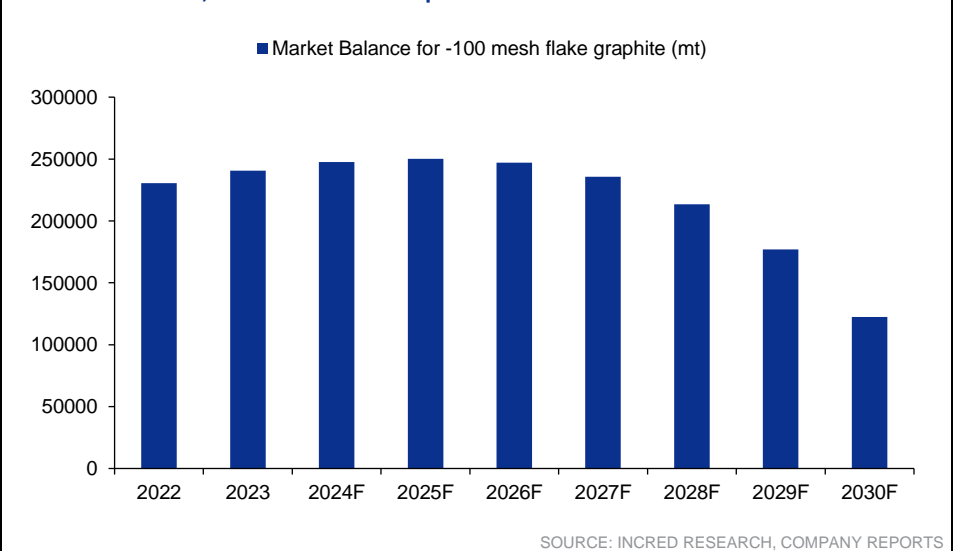
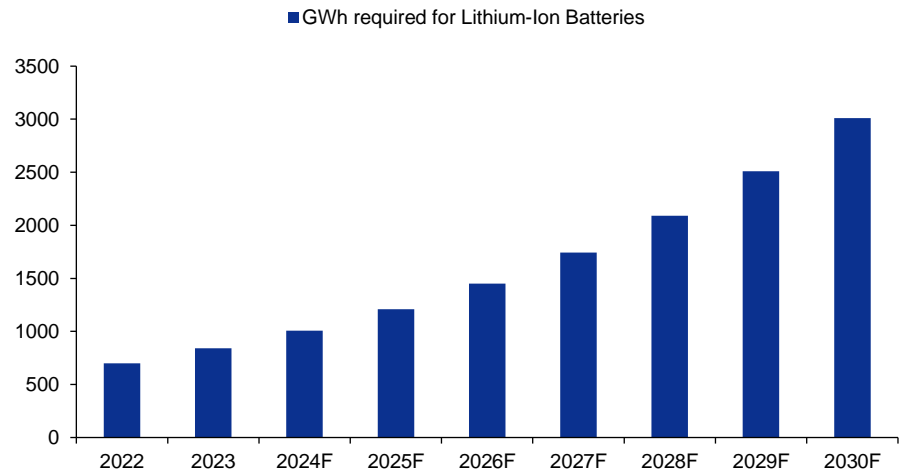
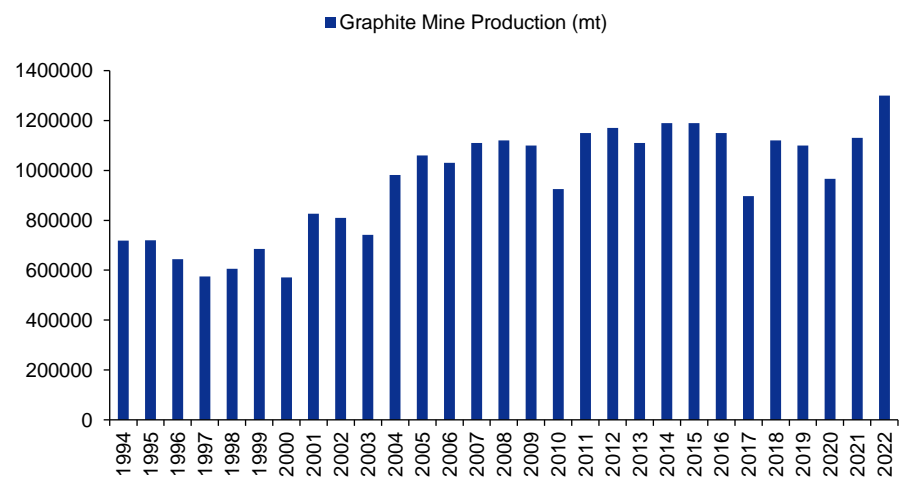


Figure 3: For our calculations, we have assumed the LiB market posting a CAGR of 20% and it will be at 3TWh by 2030F



SOURCE: INCRED RESEARCH, COMPANY REPORTS

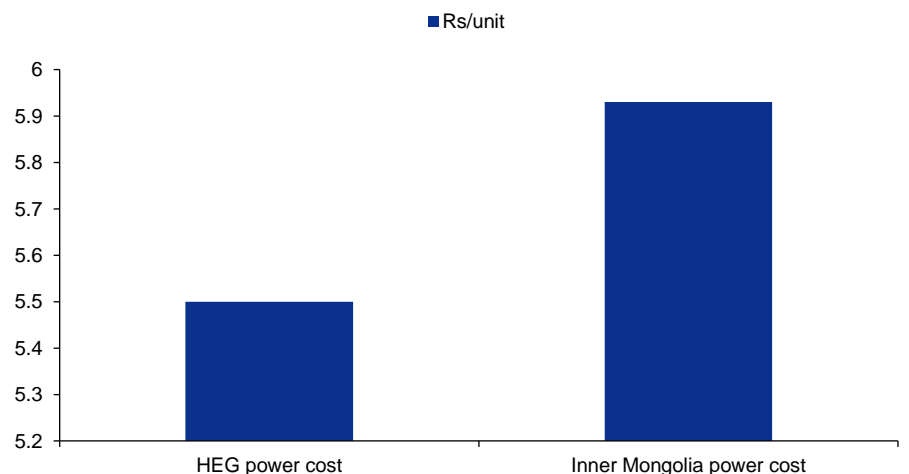
Figure 4: Historically, graphite production maintained a CAGR of only 2% over 30 years



SOURCE: INCRED RESEARCH, COMPANY REPORTS

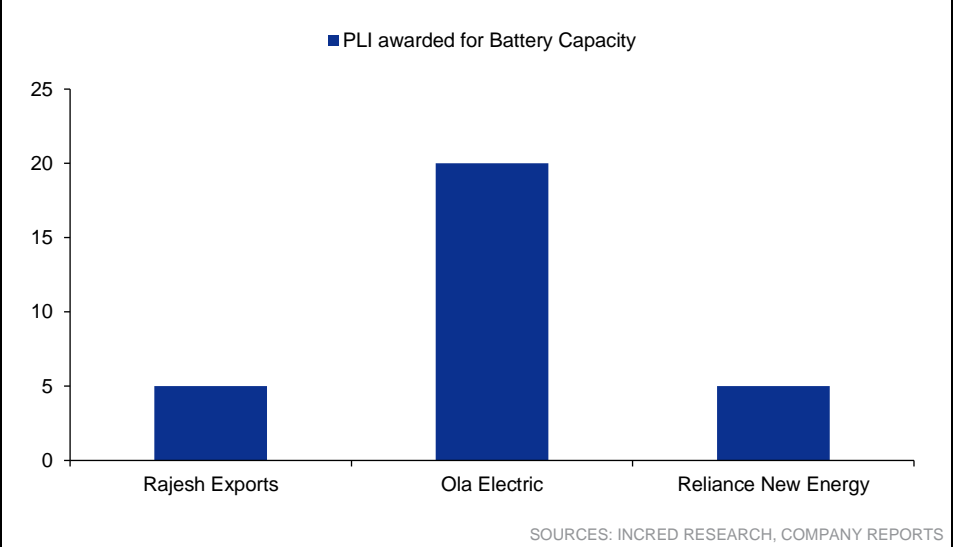
HEG will cater to GWh demand in the anode battery space ➤

Figure 5: HEG's power cost is comparable with that in inner Mongolia, China where most battery anodes are manufactured



SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 6: PLI awarded to companies in lithium-ion battery manufacturing space



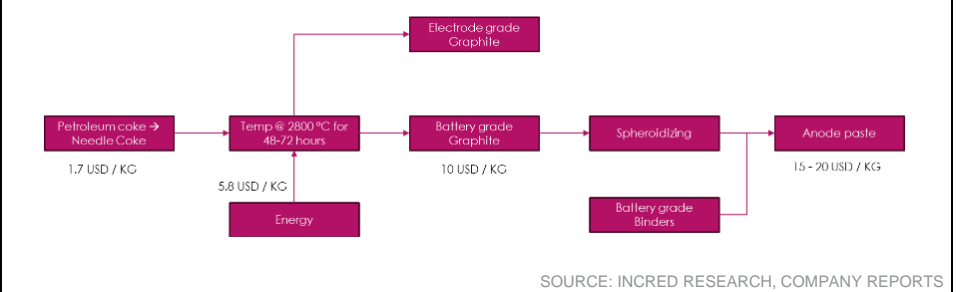
Revenue potential for HEG from its anode plant ➤

Figure 7: EBITDA generation of Rs4,150m likely

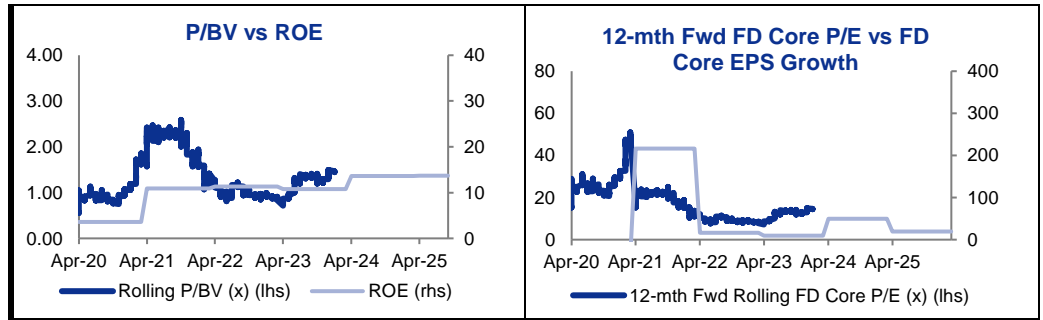
Capacity in tonne or t	20,000
Realization/t (assuming 10 US\$/kg)	830,000
Revenue (Rsm)	16,600
EBITDA margin	25%
EBITDA (Rsm)	4,150

SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 8: HEG to manufacture battery anode graphite at an average realization of USD10/kg



BY THE NUMBERS



Profit & Loss

(Rs mn)	Mar-22A	Mar-23A	Mar-24F	Mar-25F	Mar-26F
Total Net Revenues	22,016	24,672	21,036	29,442	34,914
Gross Profit	13,726	15,521	13,674	20,021	23,742
Operating EBITDA	5,272	6,197	7,363	11,188	13,267
Depreciation And Amortisation	(793)	(1,023)	(1,456)	(2,013)	(2,185)
Operating EBIT	4,479	5,174	5,907	9,175	11,083
Financial Income/(Expense)	(75)	(260)	(75)	(75)	(75)
Pretax Income/(Loss) from Assoc.					
Non-Operating Income/(Expense)	795	1,091	795	795	795
Profit Before Tax (pre-EI)	5,200	6,005	6,627	9,895	11,803
Exceptional Items					
Pre-tax Profit	5,200	6,005	6,627	9,895	11,803
Taxation	(1,294)	(1,450)	(1,657)	(2,474)	(2,951)
Exceptional Income - post-tax					
Profit After Tax	3,906	4,555	4,970	7,421	8,852
Minority Interests					
Preferred Dividends					
FX Gain/(Loss) - post tax					
Other Adjustments - post-tax					
Net Profit	3,906	4,555	4,970	7,421	8,852
Recurring Net Profit	3,906	4,555	4,970	7,421	8,852
Fully Diluted Recurring Net Profit	3,906	4,555	4,970	7,421	8,852

Cash Flow

(Rs mn)	Mar-22A	Mar-23A	Mar-24F	Mar-25F	Mar-26F
EBITDA	5,272	6,197	7,363	11,188	13,267
Cash Flow from Invt. & Assoc.					
Change In Working Capital	(5,548)	(3,899)	4,266	(3,734)	(2,931)
(Incr)/Decr in Total Provisions	(3)	(33)	(3)	(3)	(3)
Other Non-Cash (Income)/Expense	(290)	(193)	319	319	319
Other Operating Cashflow					
Net Interest (Paid)/Received	(399)	(768)	(88)	(88)	(88)
Tax Paid	(1,282)	(1,480)	(1,657)	(2,474)	(2,951)
Cashflow From Operations	(2,250)	(177)	10,200	5,209	7,614
Capex	(3,595)	(4,797)	(200)	(200)	(200)
Disposals Of FAs/subsidiaries	9	9	9	9	9
Acq. Of Subsidiaries/Investments	2,612	4,009	(442)	(442)	(2,156)
Other Investing Cashflow	(859)	568	(862)	(862)	(862)
Cash Flow From Investing	(1,834)	(211)	(1,496)	(1,496)	(3,210)
Debt Raised/(repaid)	3,663	775	(3,663)	(3,663)	(3,663)
Proceeds From Issue Of Shares					
Shares Repurchased					
Dividends Paid	(121)	(1,538)	(1,199)	(1,199)	(1,199)
Preferred Dividends					
Other Financing Cashflow	(106)	(236)	(106)	(106)	(106)
Cash Flow From Financing	3,436	(1,000)	(4,969)	(4,969)	(4,969)
Total Cash Generated	(647)	(1,388)	3,736	(1,255)	(565)
Free Cashflow To Equity	(420)	387	5,041	50	741
Free Cashflow To Firm	(4,009)	(128)	8,780	3,788	4,479

SOURCE: INCRED RESEARCH, COMPANY REPORTS

BY THE NUMBERS...cont'd

Balance Sheet

(Rs mn)	Mar-22A	Mar-23A	Mar-24F	Mar-25F	Mar-26F
Total Cash And Equivalents	6,017	6,904	5,622	11,684	20,139
Total Debtors	5,899	4,897	4,551	6,366	7,548
Inventories	9,778	14,401	9,778	9,778	9,778
Total Other Current Assets	8,376	2,323	7,879	8,376	8,376
Total Current Assets	30,070	28,525	27,830	36,205	45,841
Fixed Assets	7,484	13,482	18,202	25,163	27,308
Total Investments	3,727	7,428	7,431	7,431	7,431
Intangible Assets	1	3	1	1	1
Total Other Non-Current Assets	10,428	7,482	10,428	5,613	5,613
Total Non-current Assets	21,640	28,394	36,063	38,208	40,353
Short-term Debt	6,634	7,409	7,409	7,409	7,409
Current Portion of Long-Term Debt					
Total Creditors	4,479	4,120	4,034	5,162	6,122
Other Current Liabilities	1,706	1,582	1,706	1,706	1,706
Total Current Liabilities	12,819	13,110	13,150	14,278	15,237
Total Long-term Debt					
Hybrid Debt - Debt Component					
Total Other Non-Current Liabilities	71	51	45	45	45
Total Non-current Liabilities	71	51	45	45	45
Total Provisions	1,053	949	949	949	949
Total Liabilities	13,943	14,110	14,144	15,272	16,231
Shareholders Equity	37,767	42,809	49,749	59,140	69,962
Minority Interests					
Total Equity	37,767	42,809	49,749	59,140	69,962

Key Ratios

	Mar-22A	Mar-23A	Mar-24F	Mar-25F	Mar-26F
Revenue Growth	75.3%	12.1%	(14.7%)	40.0%	18.6%
Operating EBITDA Growth	487.2%	17.5%	18.8%	52.0%	18.6%
Operating EBITDA Margin	23.9%	25.1%	35.0%	38.0%	38.0%
Net Cash Per Share (Rs)	(17.84)	(14.41)	(47.45)	109.59	328.63
BVPS (Rs)	978.68	1,109.04	1,288.83	1,532.13	1,812.50
Gross Interest Cover	59.82	19.90	78.75	122.33	147.77
Effective Tax Rate	24.9%	24.1%	25.0%	25.0%	25.0%
Net Dividend Payout Ratio	3.1%	33.8%	24.1%	16.2%	13.5%
Accounts Receivables Days	72.83	79.76	81.85	67.58	72.65
Inventory Days	343.07	482.21	599.33	378.81	319.44
Accounts Payables Days	155.24	171.48	202.11	178.15	184.33
ROIC (%)	9.4%	10.5%	9.8%	14.2%	16.3%
ROCE (%)	10.7%	10.7%	10.8%	14.6%	15.2%
Return On Average Assets	8.5%	8.7%	8.3%	10.8%	11.1%

SOURCE: INCRED RESEARCH, COMPANY REPORTS

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