Neogen Chemicals

Venturing into a new-age vertical

Leveraging on its competencies in manufacturing advanced lithium-based salts, Neogen Chemicals Ltd (NCL) has announced the establishment of a 250-MT electrolyte formulation capacity. The company will initially invest INR 350mn to set up an electrolyte formulation capacity and produce advanced lithium-based salts required in electrolyte manufacturing. The Indian government has announced a USD 2bn production linked incentive (PLI) scheme to support manufacturing and localisation of Advanced Chemistry Cell (ACC) production units, with the aim of localising the supply chain. The company has taken a quantum leap in order to capitalise on the opportunities that lie in lithium-ion batteries and ACC manufacturing. Currently, the company is making these lithium salts for non-electrolyte applications. Thus, electrolyte formulation is just a step forward in the value chain. Being a highly integrated player, NCL will sell both lithium salts and electrolyte formulation. We believe that, over the next 5-6 years, the company will prudently invest in augmentation of electrolyte formulation manufacturing and organic chemical business capacities.

Ramp-up in the capacity utilisation of the recently-tripled organic chemicals facility at Dahej will fuel near-term growth. EPS will more than triple to INR 38.8/share in FY24E, from INR 12.6/share in FY21. Beyond that, the electrolyte formulation business will play a pivotal role in continuation of the growth momentum. Revenue from this business will reach INR 3bn by FY28E for NCL, from a mere INR 0.5bn in FY24E. The company has raised INR 2.25bn by issuing equity shares on a preferential basis. The equity infusion has helped the company improve its balance sheet. Net debt to EBITDA shall fall from 3.3x in FY21 to 1.0x in FY24E. RoCE shall improve to 14.9% in FY24E from 11.3% in FY21, but RoE shall fall by 39bps to 18.1%. We maintain a BUY on NCL, with a revised target price of INR 2,150/share.

INR 350mn of Capex announced by NCL

The Indian government has announced a USD 2bn PLI scheme to support manufacturing and localisation of ACC production units, with an aim to localise the supply chain. This scheme is in line with global emphasis, initiatives on climate change control, and positive response to electric vehicles (EVs) in India as well as across the world. ACC production heavily depends on lithium salts. With more than three decades of experience and competencies in manufacturing lithium salts, NCL is in a sweet spot to take advantage of the scheme. It has announced a Capex of INR 350mn to venture into this new space. We analyse here the opportunities and challenges the company would face in this new business vertical.

The Capex announced by NCL will be dedicated to three projects: (i) a pilot plant to facilitate scale-up at Dahej; (ii) electrolyte manufacturing facility for lithium-ion batteries; and (iii) general improvement like warehouse and administration block improvement at the Vadodara facility. Battery manufacturers will be the end users of these electrolytes.

Can the company make electrolytes in its existing plant?

No, it cannot. The salts used to manufacture electrolytes require specific physical properties. In an electrolyte, salts are dissolved in an organic solvent. Therefore, the moisture content in these salts must be less than 20ppm. Currently, NCL manufactures these salts in a water solution.

BUY

CMP *(as on 20 Jan 2022)*	INR 1,692
Target Price	INR 2,150
NIFTY	17,617

KEY CHANGES	OLD	NEW
Rating	BUY	BUY
Price Target	INR 1,470	INR 2,150
EPS %	FY22E	FY23E
	+24.4%	+25.2%

KEY STOCK DATA	
Bloomberg code	NEOGEN IN
No. of Shares (mn)	23
MCap (INR bn) / ($ mn)	39/525
6m avg traded value (INR mn)	216
52 Week high / low	INR 1,934/681

STOCK PERFORMANCE (%)	3M	6M	12M
Absolute (%)	34.2	90.4	132.7
Relative (%)	37.3	77.3	113.7

SHAREHOLDING PATTERN (%)	Dec-21	Jan-22
Promoters	64.33	60.19
FIs & Local MFs	14.09	18.48
FPIs	4.73	4.42
Public & Others	16.85	16.91
Pledged Shares	0.00	0.00

Source: BSE

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Therefore, it requires a separate facility with equipment and packaging facility, which will help it maintain the desired moisture content in the final product.

Electrolytes to act as a growth lever for the company

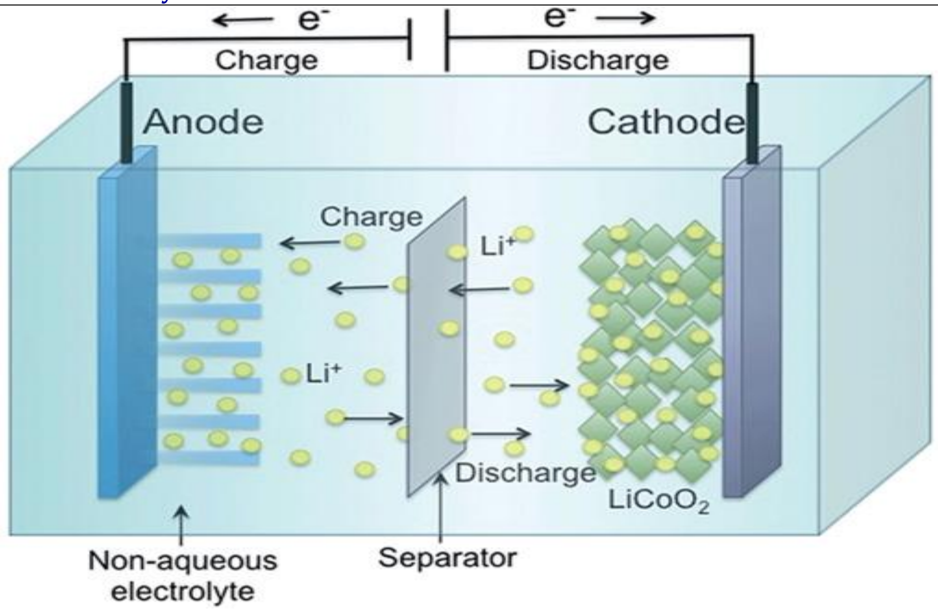
Electrolyte manufacturing has two parts: (i) salts manufacturing and (ii) electrolyte formulation.

(i) **Salts manufacturing:** These salts are more advanced as compared to lithium derivatives that the company currently manufactures. Starting from lithium carbonate, these salts require 3-4 processing steps compared to 1-2 steps for lithium derivatives. NCL has an extensive understanding of chemistry and technological competency in manufacturing these salts. The technology is developed by the inhouse R&D team. The equipment required is expected to be delivered by Q4FY22.

The company has manufactured these salts at its current facility. However, they were used for non-electrolyte applications. With minor modifications at its Dahej plant, NCL can manufacture salts of desired quality for electrolyte applications. Initially, it will manufacture these salts at Dahej, and put up a dedicated line eventually, if demand for them increases.

(ii) **Electrolyte formulation:** The company is setting up a 250-MT capacity plant for electrolyte formulation, which is a mixture of lithium-based salts and additives in an organic solvent.

Exhibit 1: Dissection of a lithium ion battery: NCL to manufacture the non-aqueous electrolyte



Source: Company, HSIE Research

Challenges in electrolyte manufacturing

There are two parts to electrolyte manufacturing: (i) salt manufacturing and (ii) electrolyte formulation. Each part has different challenges.

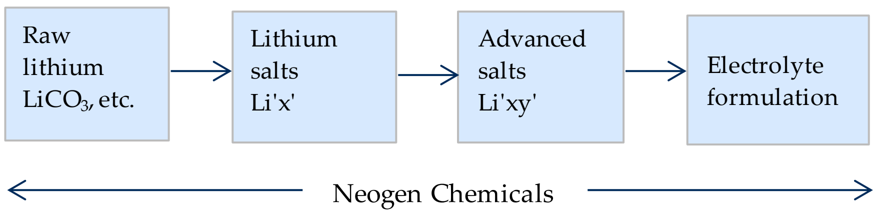
In salt manufacturing, proper understanding of chemistry and producing salt with minimum impurity is a challenge. In the making of an electrolyte formulation, moisture control and obtaining the appropriate combination of salts in the final product pose the main challenges.

Business opportunity for NCL

In electrolyte manufacturing, NCL has a presence across the value chain. The company is highly integrated and can produce an entire range starting from lithium carbonate, a naturally occurring salt of lithium, to advanced intermediates of salts required for electrolytes, the final lithium salts, and electrolyte formulation. It can sell advanced intermediates and final lithium salts to electrolyte manufacturers. Further, the company can sell electrolyte formulations to battery manufacturers. Selling electrolyte formulations to battery manufacturers will be the company's primary source of revenue in this business, while selling salts to electrolyte manufacturers will be a secondary source. With this initial investment of INR 350mn in the electrolyte manufacturing business, NCL expects an incremental revenue of INR 500mn per annum by FY24. Thus, it expects to reach a topline of INR 7.25bn by FY24.

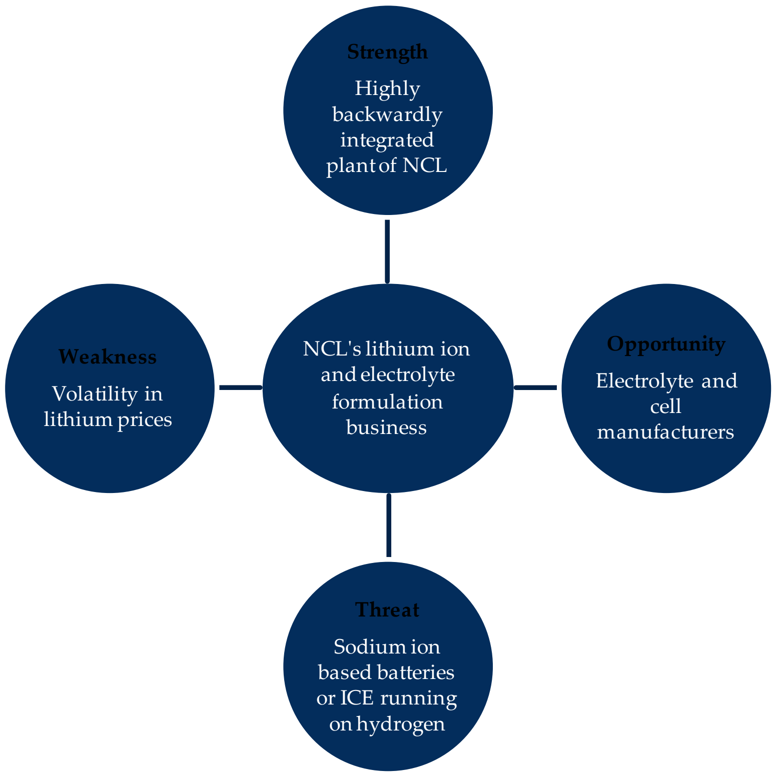
Lithium-ion batteries can be used in electric vehicles (EVs) and as energy storage systems (ESS) for solar, wind and other alternative energy conversions. As per the company's estimates, production of lithium batteries in India is expected to touch 160 GWh by 2030, from negligible levels at present. This is expected to translate into electrolytes demand of 50,000 to 70,000 MT by 2030, as per its estimates. Electrolyte has a lithium salt concentration of about 10-20% in organic solvent. It implies that the domestic demand for lithium-based salts will be ~5000-14,000MT per annum by 2030. Thus, NCL has a significant opportunity in the electrolyte formulation business, given that it is highly integrated and leads manufacturing of lithium salts in India.

Exhibit 2: Taking over the entire electrolyte manufacturing value chain



Source: Company, HSIE Research

Exhibit 3: SWOT of the new-age business



Source: Company, HSIE Research

Comparison with sodium ion batteries

Sodium and lithium ions have lower electrode cation than hydrogen ions. In batteries, cathode can be made up of either sodium or lithium, while graphite can act as an anode. Therefore, sodium-based batteries can also be used in electric vehicles or as energy storage systems.

A sodium atom is more than three times heavier (atomic weight 22.9 atomic mass units (amu) than a lithium atom (atomic weight 6.9amu). The energy density (the amount of energy delivered per unit of mass, expressed in watt hours per kilogram) of lithium ion batteries is high as compared to sodium ion batteries. Therefore, a lithium-ion battery can produce a larger amount of energy in a smaller footprint. As a result, lithium-ion batteries are preferred in transportation, while sodium-ion ones are used in non-transportation applications like ESS.

Capacity addition to drive growth

Post commissioning of Phases I and II, the organic chemicals capacity of NCL increased from 1,30,400 litres to 4,07,000 litres. Now, sufficient capacity is available with NCL to allow it to fulfil commitment given in the two long-term contracts and those that are expected to be signed in the near future. The company has >40 acre of freehold land available for future expansion at Dahej and Vadodara. At this juncture, it has invested in capacity building, and from here onwards, it should tap new customers and enter new industries and markets.

NCL raised INR 2.25bn through preferential shares

The company has raised INR 2.25bn by issuing 1.6mn equity shares on a preferential basis. This equity infusion should help improve its balance sheet. Net debt to EBITDA shall fall from 3.3x in FY21 to 1.0x in FY24E. RoCE will improve to 14.9% in FY24E from 11.3% in FY21, but RoE shall fall by 39bps to 18.1%. The money raised will be utilised to set up additional capacities, if required.

Bromine chemistry versus fluorine chemistry

Fluorinated organic compounds are of particular interest in the field of pharmaceuticals and agrochemicals. Of the total approved molecules, nearly 20% of pharmaceutical compounds and 34% of agrochemicals contain fluorine atom. Application of fluoro-organic compounds can be attributed to the unique metabolic stability, lipophilicity, and binding affinity offered by them. However, brominated hydrocarbon has limited application in pharmaceutical and agrochemical industries. Bromide ions have the ability to decrease the sensitivity of the central nervous system. The use of bromine in APIs is very low as compared to the use of fluorine in API formulations.

Brominated compounds are largely used in the process of manufacturing pharmaceutical products. These compounds act as a catalyst and reduce the reaction conditions. Advanced intermediates are used as catalysts, which facilitate the reaction at a lower temperature or pressure reaction conditions. Therefore, although bromine is absent in the final API of pharma and agrochemical molecules, bromine molecules have wide application in the production of an API. Thus, fluorine and bromine chemistries do not compete for the market share of APIs since they complement each other.

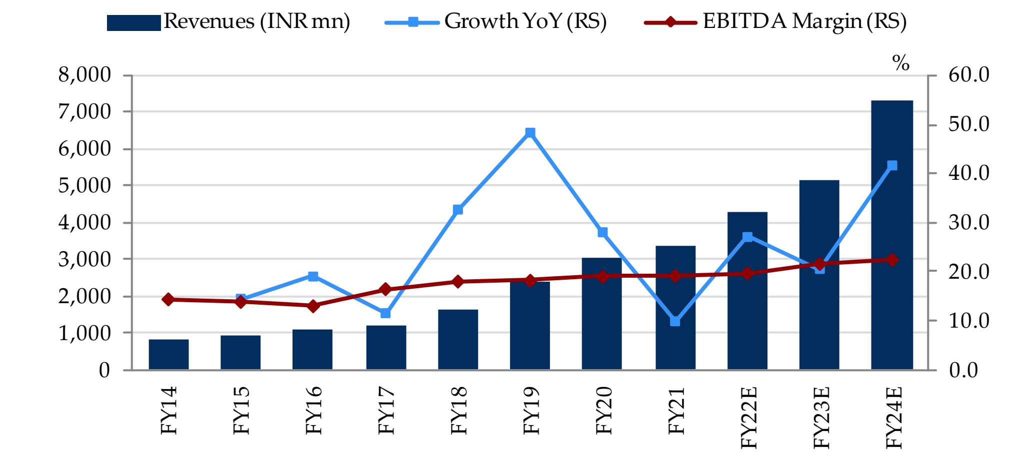
Exhibit 4: Change in estimates (Consolidated)

Y/E Mar	FY22E Old	FY22E New	% Ch	FY23E Old	FY23E New	% Ch	FY24E Old	FY24E New	% Ch
EBITDA (INR mn)	840	840	*0.0%*	1,082	1,112	*2.8%*	1,486	1,638	*10.2%*
Adj. EPS (INR/sh)	15.8	19.7	*24.4%*	20.6	25.8	*25.2%*	32.0	38.8	*21.4%*

Source: Company, HSIE Research | Note: The change in estimates is mainly on account of change in the finance cost and other income assumptions

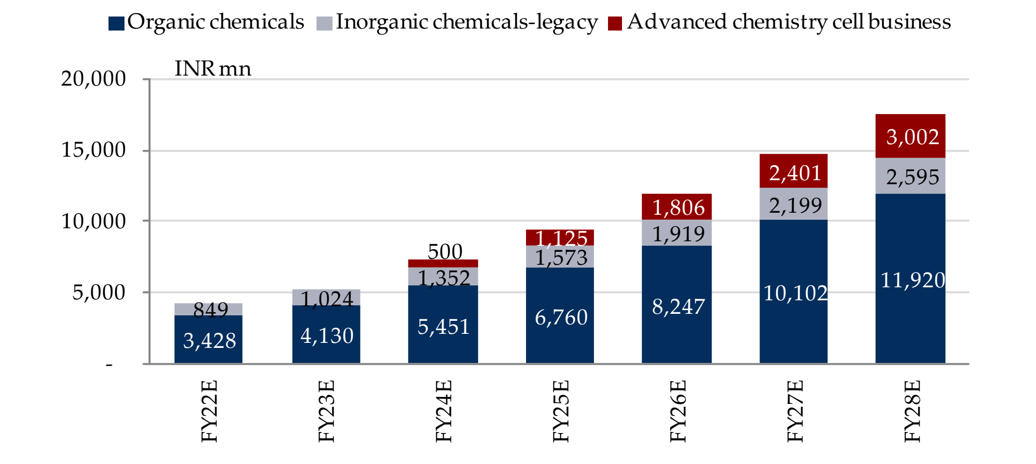
Story in charts

Exhibit 5: Revenue and EBITDA margin, going forward



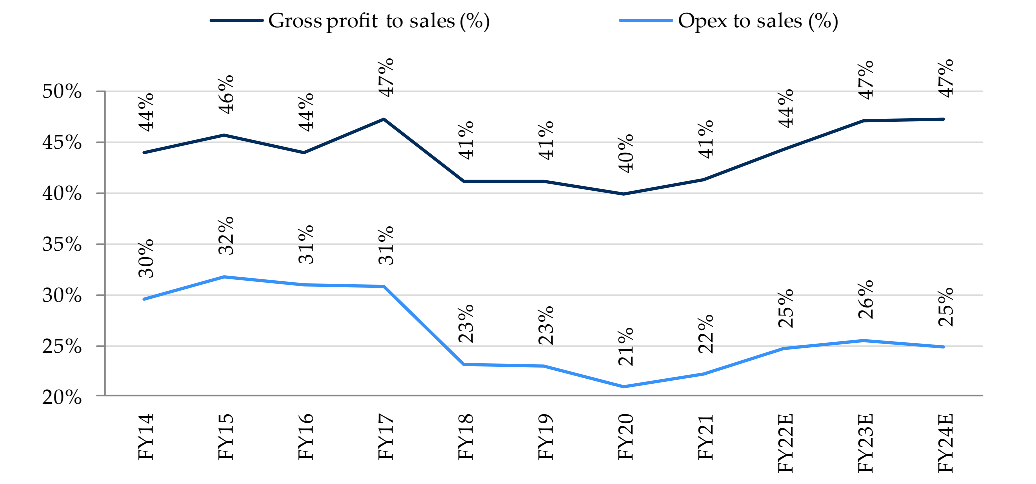
Source: Company, HSIE Research

Exhibit 6: Advanced chemistry cell business to hit an INR 3bn revenue in FY28E



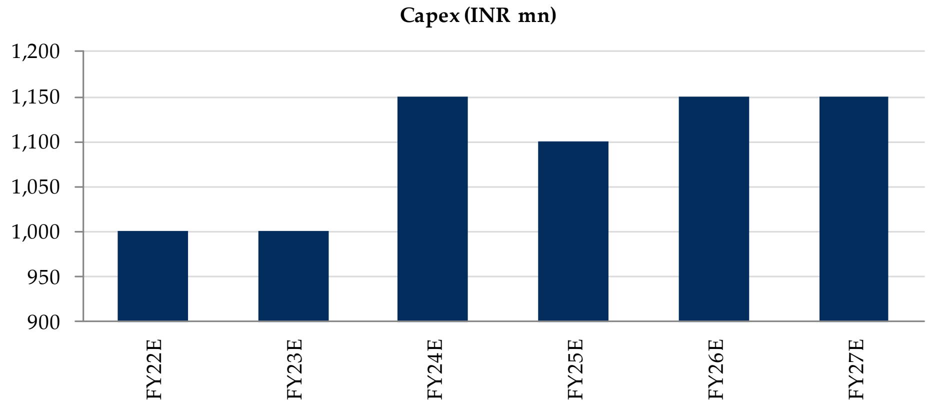
Source: Company, HSIE Research

Exhibit 7: Gross margin movement and opex trend (%)



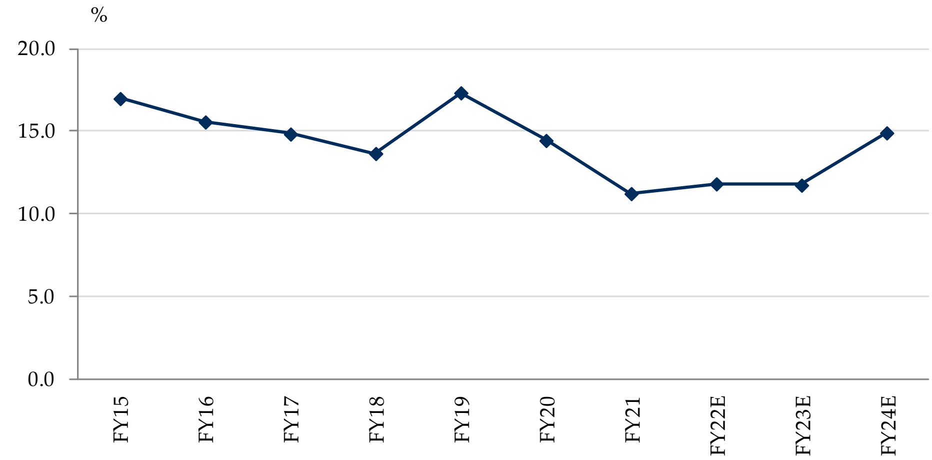
Source: Company, HSIE Research

Exhibit 8: Capex going forward



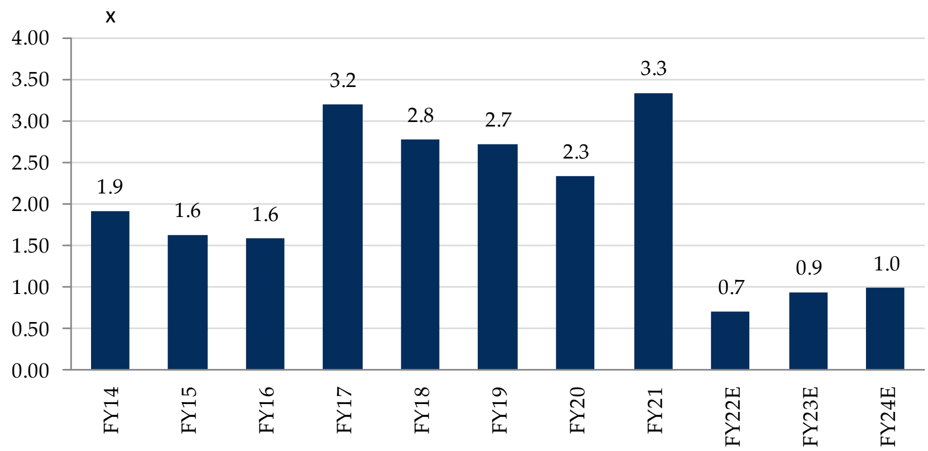
Source: Company, HSIE Research

Exhibit 9: RoCE on a rising trend



Source: Company, HSIE Research

Exhibit 10: Net debt to EBITDA (x)



Source: Company, HSIE Research

Financials (Consolidated)

INCOME STATEMENT

INR mn	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
Revenues	**1,215**	**1,612**	**2,391**	**3,061**	**3,364**	**4,275**	**5,155**	**7,303**
Growth %	***11.6***	***32.7***	***48.3***	***28.1***	***9.9***	***27.1***	***20.6***	***41.7***
Raw Material	640	948	1,407	1,841	1,976	2,382	2,728	3,853
Employee Cost	54	87	112	172	201	272	353	424
Other Expenses	320	286	438	467	544	781	961	1,388
EBITDA	**200**	**290**	**434**	**581**	**644**	**840**	**1,112**	**1,638**
EBIDTA Margin (%)	*16.5*	*18.0*	*18.2*	*19.0*	*19.1*	*19.6*	*21.6*	*22.4*
EBITDA Growth %	*41.6*	*45.1*	*49.8*	*33.7*	*10.9*	*30.5*	*32.4*	*47.3*
Depreciation	13	19	28	52	69	118	190	249
EBIT	**187**	**271**	**406**	**528**	**575**	**722**	**922**	**1,389**
Other Income (Including EO Items)	3	7	5	1	1	38	6	-
Interest	75	104	119	119	138	101	69	100
PBT	**115**	**174**	**292**	**410**	**438**	**659**	**859**	**1,289**
Tax	38	64	83	124	129	168	217	322
Share of Profit/(Loss) of investments accounted for using equity method	0	0	1	1	4	1	1	1
RPAT	**77**	**110**	**209**	**287**	**313**	**492**	**643**	**968**
EO (Loss) / Profit (Net Of Tax)	-	-	-	-	-	-	-	-
APAT	**77**	**110**	**209**	**287**	**313**	**492**	**643**	**968**
Share from associates	-	-	-	-	-	-	-	-
Minority Interest	-	-	-	-	-	-	-	-
Consolidated APAT	**77**	**110**	**209**	**287**	**313**	**492**	**643**	**968**
Consolidated APAT Growth (%)	***48.2***	***43.0***	***90.7***	***36.8***	***9.3***	***56.9***	***30.8***	***50.4***
AEPS	**3.1**	**4.4**	**8.4**	**11.5**	**12.6**	**19.7**	**25.8**	**38.8**
AEPS Growth %	***48.2***	***43.0***	***90.7***	***36.8***	***9.3***	***56.9***	***30.8***	***50.4***

Source: Company, HSIE Research

BALANCE SHEET

INR mn	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
SOURCES OF FUNDS								
Share Capital	200	200	201	233	233	249	249	249
Reserves And Surplus	220	304	501	1,329	1,597	4,222	4,734	5,470
Total Equity	**420**	**504**	**702**	**1,562**	**1,830**	**4,472**	**4,984**	**5,719**
Minority Interest	-	-	-	-	-	-	-	-
Long-term Debt	368	385	506	304	1,161	735	1,235	1,235
Short-term Debt	301	437	694	1,068	999	-	-	400
Total Debt	**669**	**822**	**1,200**	**1,371**	**2,160**	**735**	**1,235**	**1,635**
Deferred Tax Liability	37	40	49	56	82	83	85	87
Long-term Provision and others	34	39	40	128	108	110	112	114
TOTAL SOURCES OF FUNDS	**1,159**	**1,406**	**1,991**	**3,117**	**4,179**	**5,400**	**6,416**	**7,555**
APPLICATION OF FUNDS								
Net Block	563	670	828	1,105	1,267	2,821	3,737	4,627
Capital WIP	13	14	4	27	1,147	475	369	380
LT Loans And Advances	45	48	29	100	97	99	101	103
Total Non-current Investments	5	4	5	6	8	8	8	8
Total Non-current assets	**626**	**736**	**867**	**1,238**	**2,518**	**3,402**	**4,214**	**5,117**
Inventories	400	500	724	1,299	1,140	1,304	1,415	1,805
Debtors	322	414	607	752	786	998	1,204	1,705
Cash and Cash Equivalents	31	18	20	15	12	139	188	12
Other Current Assets	145	136	247	245	464	473	482	492
Total Current Assets	**897**	**1,068**	**1,598**	**2,311**	**2,402**	**2,915**	**3,290**	**4,013**
Creditors	310	367	428	359	661	836	1,006	1,492
Other Current Liabilities & Provns	55	32	45	72	79	81	83	84
Total Current Liabilities	**364**	**399**	**473**	**431**	**740**	**917**	**1,088**	**1,576**
Net Current Assets	**533**	**669**	**1,124**	**1,880**	**1,661**	**1,997**	**2,202**	**2,438**
TOTAL APPLICATION OF FUNDS	**1,159**	**1,406**	**1,991**	**3,117**	**4,179**	**5,400**	**6,416**	**7,555**

Source: Company, HSIE Research

CASH FLOW STATEMENT

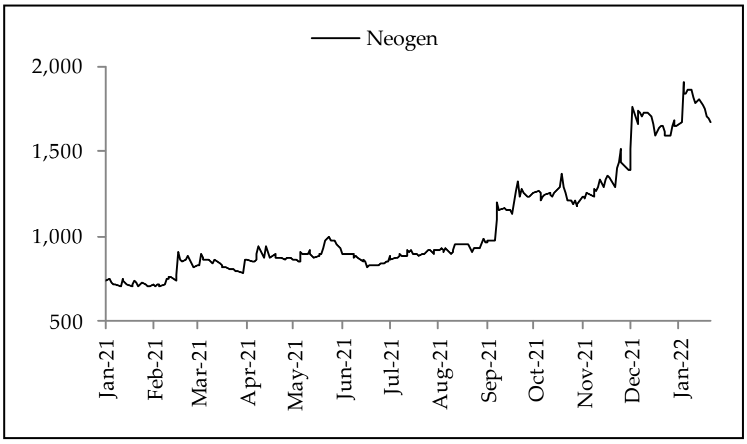
(INR mn)	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
Reported PBT	115	174	293	411	442	660	860	1,290
Non-operating & EO Items	(3)	(7)	(5)	(1)	(1)	(38)	(6)	-
Interest Expenses	75	104	119	119	138	101	69	100
Depreciation	13	19	28	52	69	118	190	249
Working Capital Change	(173)	(149)	(453)	(761)	215	(209)	(155)	(413)
Tax Paid	(23)	(61)	(75)	(117)	(103)	(166)	(215)	(321)
OPERATING CASH FLOW (a)	**4**	**81**	**(92)**	**(296)**	**759**	**466**	**743**	**906**
Capex	(408)	(127)	(176)	(353)	(1,350)	(1,000)	(1,000)	(1,150)
Free Cash Flow (FCF)	(404)	(46)	(268)	(649)	(591)	(534)	(257)	(244)
Investments	(5)	1	(1)	(1)	(2)	(0)	-	-
Non-operating Income	3	7	5	1	1	38	6	-
Others	(31)	(3)	18	(70)	3	(2)	(2)	(2)
INVESTING CASH FLOW (b)	**(440)**	**(122)**	**(154)**	**(423)**	**(1,348)**	**(964)**	**(996)**	**(1,152)**
Debt Issuance/(Repaid)	421	153	378	171	789	(1,425)	500	400
Interest Expenses	(75)	(104)	(119)	(119)	(138)	(101)	(69)	(100)
FCFE	(58)	3	(10)	(597)	60	(2,061)	174	55
Share Capital Issuance	-	-	1	33	-	16	-	-
Dividend	(5)	(39)	(38)	(43)	(47)	(84)	(109)	(194)
Others	101	19	26	672	(19)	2,219	(20)	(36)
FINANCING CASH FLOW (c)	**442**	**29**	**248**	**713**	**586**	**626**	**302**	**70**
NET CASH FLOW (a+b+c)	**6**	**(13)**	**2**	**(5)**	**(3)**	**127**	**49**	**(177)**
Closing Cash & Equivalents	**31**	**18**	**20**	**15**	**12**	**139**	**188**	**12**

KEY RATIOS

	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
PROFITABILITY %								
Gross profit margin	47.3	41.2	41.1	39.9	41.3	44.3	47.1	47.2
EBITDA Margin	16.5	18.0	18.2	19.0	19.1	19.6	21.6	22.4
EBIT Margin	15.4	16.8	17.0	17.3	17.1	16.9	17.9	19.0
APAT Margin	6.3	6.8	8.8	9.4	9.3	11.5	12.5	13.3
RoE	22.1	23.8	34.7	25.3	18.5	15.6	13.6	18.1
RoIC	15.3	13.8	17.5	14.7	13.4	13.8	13.0	16.0
RoCE	14.9	13.7	17.4	14.5	11.3	11.8	11.8	14.9
EFFICIENCY								
Tax Rate %	33.3	37.0	28.5	30.4	29.4	25.5	25.2	25.0
Fixed Asset Turnover (x)	3.3	4.7	3.1	2.9	2.5	1.9	1.4	1.5
Inventory (days)	120	113	111	155	124	111	100	90
Debtors (days)	97	94	93	90	85	85	85	85
Other Current Assets (days)	43	31	38	29	50	40	34	25
Payables (days)	177	141	111	71	122	128	135	141
Other Current Liab & Provns (days)	16	7	7	9	9	7	6	4
Cash Conversion Cycle (days)	67	89	123	194	129	102	79	55
Net Debt/EBITDA (x)	3.2	2.8	2.7	2.3	3.3	0.7	0.9	1.0
Net D/E	1.5	1.6	1.7	0.9	1.2	0.1	0.2	0.3
Interest Coverage	2.5	2.6	3.4	4.4	4.2	7.1	13.4	13.8
PER SHARE DATA (Rs)								
EPS	3.1	4.4	8.4	11.5	12.6	19.7	25.8	38.8
CEPS	3.6	5.1	9.5	13.6	15.3	24.4	33.4	48.8
Dividend	1.0	1.0	1.5	2.0	2.3	3.4	4.4	7.8
Book Value	16.8	20.2	28.1	62.7	73.4	179.3	199.8	229.3
VALUATION								
P/E (x)	549.2	384.2	201.4	147.3	134.7	85.8	65.6	43.6
P/Cash EPS (x)	469.2	328.7	177.4	124.5	110.4	69.2	50.6	34.7
P/BV (x)	100.6	83.7	60.1	27.0	23.1	9.4	8.5	7.4
EV/EBITDA (x)	214.3	148.3	99.9	75.0	68.9	51.0	38.9	26.8
EV/Revenue (x)	35.3	26.7	18.1	14.2	13.2	10.0	8.4	6.0
Dividend Yield (%)	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.5
OCF/EV (%)	0.0	0.2	(0.2)	(0.7)	1.7	1.1	1.7	2.1
FCFF/EV (%)	(0.9)	(0.1)	(0.6)	(1.5)	(1.3)	(1.2)	(0.6)	(0.6)
FCFE/M Cap (%)	(0.1)	0.0	(0.0)	(1.4)	0.1	(4.9)	0.4	0.1

Source: Company, HSIE Research

1Yr Price Movement



Rating Criteria

BUY: >+15% return potential
ADD: +5% to +15% return potential
REDUCE: -10% to +5% return potential
SELL: > 10% Downside return potential

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