India

REDUCE *(previously HOLD)*

Consensus ratings*:	Buy 6	Hold 4	Sell 3

Current price:	Rs541
Target price: ▼	Rs414
Previous target:	Rs510
Up/downside:	-23.5%
InCred Research / Consensus:	-18.8%
Reuters:	AVAL.INS
Bloomberg:	AVALON IN
Market cap:	US$490m
	Rs35,601m
Average daily turnover:	US$1.4m
	Rs102.7m
Current shares o/s:	65.7m
Free float:	24.2%

**Source: Bloomberg*

Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	11.2	5.5	(1.6)
Relative (%)	7.1	(1.9)	(19.2)

Major shareholders	% held
Nipppon Life	5.8
HDFC MF	4.7
Mirae Asset	2.1

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Avalon Technologies

Rooftop solar in US on the verge of collapse

- With the transition of California from net metering to net billing, the rooftop solar industry has collapsed in the US.
- As further US states follow suit and transition to net billing, we expect a fundamental risk to Avalon Technologies' clean energy US portfolio.
- We cut our revenue/EBITDA/PAT estimates for FY25F & FY26F by 4%/16%/22% and 8%/16%/19%. Downgrade to REDUCE with a TP of Rs414.

California's switch to net billing is a hammer blow for rooftop solar

Net metering allows the customers with rooftop solar installations to sell their electricity back to the grid at the full retail price of power rather than the lower wholesale price that other power providers are paid. This is great if you own solar panels, but it effectively pays rooftop solar owners more than the electricity is worth. To cite an example, the US Energy Information Administration's data shows the statewide average retail residential electricity rate in California stood at 25.84 cents per kilowatt hour (kWh) in 2022. This means someone with solar panels on their house would be paid the full retail cost of 25.84 cents per kWh. The problem with this arrangement, however, is that the people with solar panels on their roofs are not paying their fair share to upkeep the rest of the grid, but these substantial costs don't disappear; they are foisted upon people without solar panels. For example, while using solar power will reduce the need to burn some fuel, the cost of fuel is a relatively small part of the total retail price of electricity. There are other costs like maintaining transmission lines, paying the wages of utility employees and so on, and these costs are ultimately borne by the people not owning panels. This also sets a sort of domino effect, as other US states are also looking to switch to 'billing'.

Avalon Tech's clean energy portfolio is not expected to show growth

California is the largest contributor to the US residential solar industry, with 30% of PV installation contribution. With the slowdown in California, this will result in a decline in the US solar industry. As a result, Avalon Technologies' clients like Lunar Energy, which does rooftop PV installations, will also face headwinds. We expect the solar industry in the US to face headwinds in FY25F and FY26F. Moreover, solar installations also involve high upfront costs, which are not easy to bear in this high interest rate environment.

We value the stock at 35x FY26F EPS; downgrade rating to REDUCE

We believe Avalon Technologies' expectations that its clean energy portfolio will revive in 2HFY25F are too good to be true. The US solar industry is facing a fundamental risk and there is no clear path for revival as of now. We cut our revenue/EBITDA/PAT estimates for FY25F and FY26F by 4%/16%/22% and 8%/16%/19%, respectively. We value the stock at 36x FY26F EPS to arrive at a lower target price of Rs414 (Rs510) and downgrade its rating to REDUCE (from HOLD). Key upside risk is a quick ramp-up in the Indian electronics manufacturing services or EMS business offsetting the slowdown in the US business.

Financial Summary	Mar-22A	Mar-23A	Mar-24A	Mar-25F	Mar-26F
Revenue (Rsm)	8,407	9,447	8,672	9,704	12,441
Operating EBITDA (Rsm)	975	1,128	626	879	1,327
Net Profit (Rsm)	675	525	280	448	772
Core EPS (Rs)	7.9	8.0	4.3	6.8	11.7
Core EPS Growth	124.0%	1.6%	(46.7%)	60.2%	72.1%
FD Core P/E (x)	52.74	67.72	127.11	79.35	46.10
DPS (Rs)	0.0	0.0	0.0	0.0	0.0
Dividend Yield	0.00%	0.00%	0.00%	0.00%	0.00%
EV/EBITDA (x)	39.40	30.51	58.81	41.09	27.27
P/FCFE (x)	271.15	(128.79)	(18.93)	(473.14)	(111.99)
Net Gearing	322.8%	(21.5%)	22.3%	9.3%	9.2%
P/BV (x)	40.11	6.62	6.50	6.01	5.31
ROE	69.6%	16.8%	5.2%	7.9%	12.2%
% Change In Core EPS Estimates					
InCred Research/Consensus EPS (x)					

SOURCE: INCRED RESEARCH, COMPANY REPORTS

Residential solar power installations declining in the US

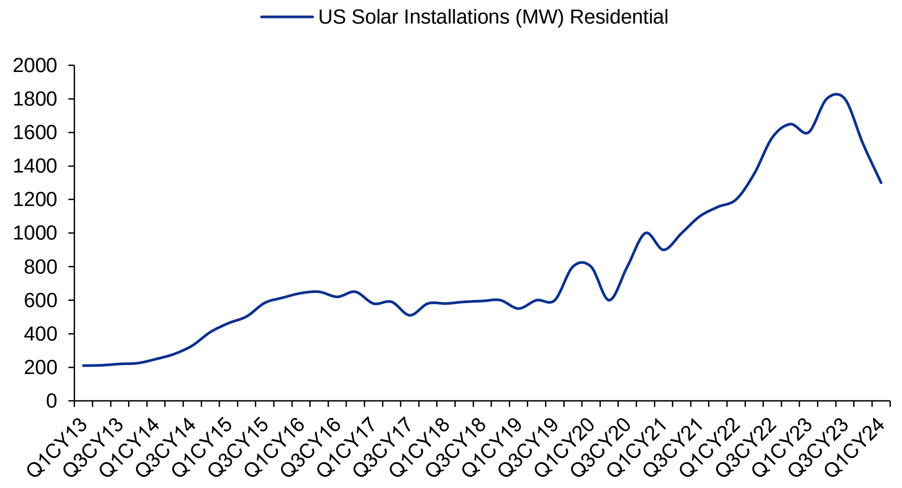
Solar PV installations saw a period of boom post Covid-19 pandemic in CY21 and CY22. Residential and utility scale installations posted a record growth number, but that has not been the case in CY23 and CY24F. Installations have declined in the residential segment and the main reason attributed to this is **net metering**. California, the largest state in the US in terms of solar PV installations, is facing a tremendous slowdown, which is ultimately resulting in solar industry slowdown across the US. **We believe the net metering problem is a fundamental one which will have long-term implications on the US residential solar power market, underlying our bearish conviction on Avalon Technologies.**

Figure 1: Revision of estimates for Avalon Technologies

Earnings revision	New Estimates		Old Estimates		Change	
(Rs m)	FY25F	FY26F	FY25F	FY26F	FY25F	FY26F
Revenue	9,704	12,441	10,102	13,507	-3.9%	-7.9%
EBITDA	879	1,327	1,054	1,581	-16.6%	-16.1%
PAT	448	772	578	952	-22.4%	-18.9%

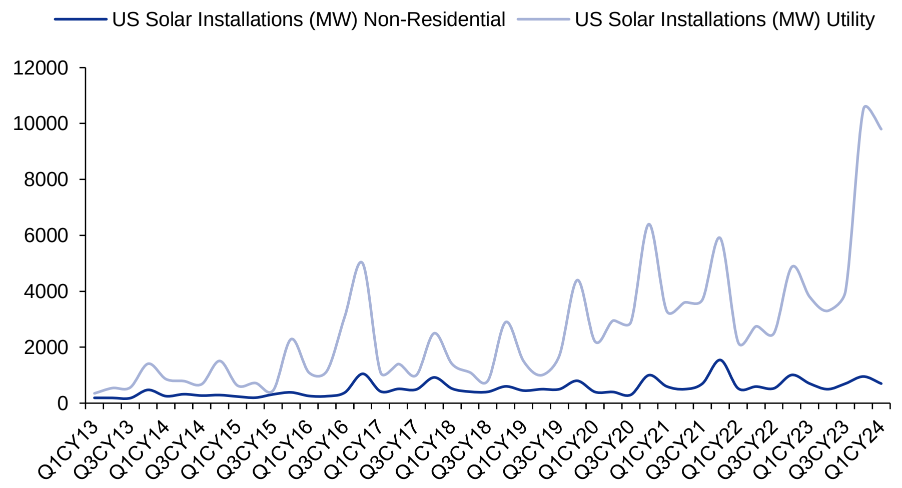
SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 2: Residential solar installations in the US have declined significantly



SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 3: However, utility and commercial scale installations have continued their upward trajectory

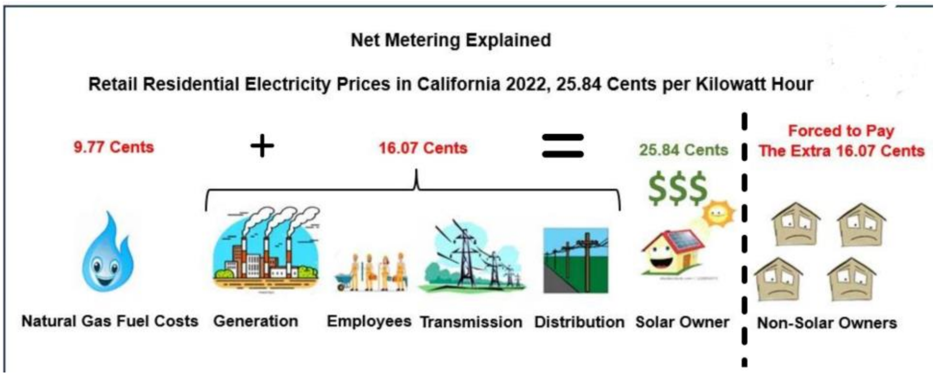


SOURCE: INCRED RESEARCH, COMPANY REPORTS

Net metering is a significant drawback to residential rooftop solar power ›

Net metering allows the customers with rooftop solar power installations to sell their electricity back to the grid at the full retail price of power rather than the lower wholesale price that other power providers are paid. This is great if you own solar panels, but it effectively pays rooftop solar owners more than the electricity is worth. **For example, the US Energy Information Administration data shows the statewide average retail residential electricity rate in California was 25.84 cents per kilowatt hour (kWh) in 2022. This means someone with solar panels on their house would be paid the full retail cost of 25.84 cents per kWh.** The problem with this arrangement, however, is that the people with solar panels on their roofs are not paying their fair share to upkeep the rest of the grid, but these substantial costs don't disappear; they are foisted upon people without solar panels. For example, while using solar power will reduce the need to burn some fuel, the cost of fuel is a relatively small part of the total retail price of electricity. Fig. 3 below shows the cost of natural gas for a combustion turbine peaking plant—the most expensive type of natural gas plant—was 9.77 cents per kWh in 2022, or about 38 per cent of the full retail cost of power. The remaining 62 per cent of the retail cost of electricity goes towards a myriad of things required for the maintenance and operation of the grid: maintaining the natural gas and other power plants in California that *sometimes* keep the lights on, paying employees of the electric company, building and maintaining transmission lines, and upkeep for the distribution system. By getting paid the full retail price of 25.84 cents per kWh, instead of the 9.77 cents of avoided fuel costs, people with solar panels are not paying to maintain the rest of the electric grid. However, these costs—16.07 cents per kWh—do not cease to exist, especially in a state where electricity bills are soaring because of utility companies spending billions on wildfire prevention; they are simply passed on to the customers who do not have solar panels, which is why the houses without solar panels in Fig. 3 look so sad.

Figure 4: Net metering is effectively a transfer of wealth from people not owning solar panels to those who do

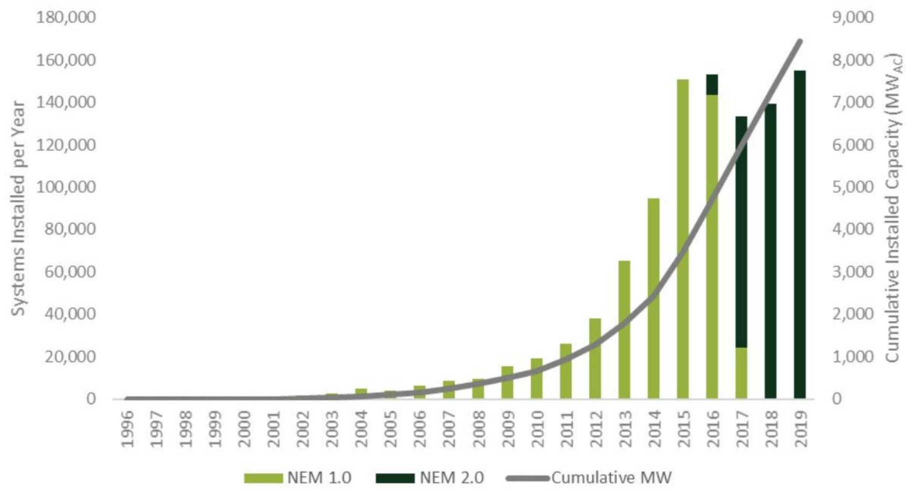


SOURCE: INCRED RESEARCH, COMPANY REPORTS

State of California came out with reforms to combat the issue of net metering ›

The California PUC (Public Utilities Commission) couldn't ignore the ongoing massive wealth transfer from low-income to high-income earners in the state forever. The first reform was the NEM 2.0 program—which did very little to address the main issue of overpaying for solar generation because it maintained the basic net metering principle of paying the full retail price. However, it still led to a slight reduction in annual installations in the state, which you can see in Fig. 4.

Figure 5: There was a slight reduction in solar PV installations when NEM 2.0 was implemented in CY16



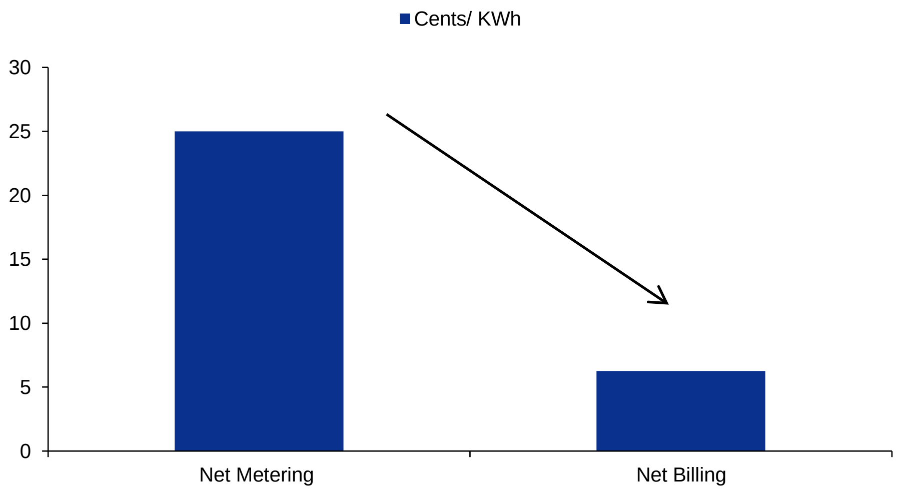
SOURCE: INCRED RESEARCH, COMPANY REPORTS

The major change to net metering happened in Dec 2022, when PUC commissioners passed an updated NEM 3.0 program that became effective in Apr 2023. This program was based on net billing as opposed to net metering.

Net billing, as opposed to net metering, led to a significant decline in solar PV installations in California ›

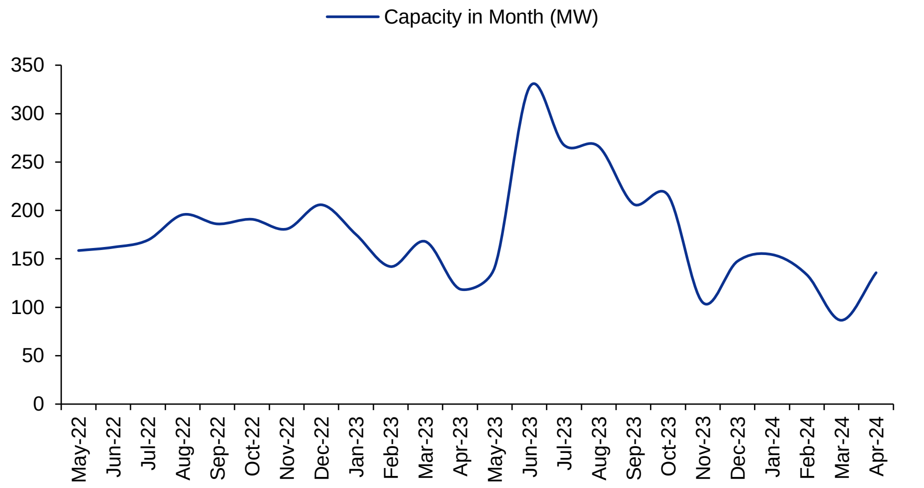
In NEM 3.0, the CPUC established a new rate for crediting solar exports, shifting the structure from net metering to net billing, which is much lower in value – and by lower, we mean very lower. NEM 3.0 is based on 'avoided cost' rates, which means what your utility company pays for any electricity you send to the grid is no longer based on your typical electricity rates, like a traditional net metering credit, but rather calculated separately. The exact rate varies depending on the hour of the day, day of the week (i.e., weekday vs. weekend), and the month you export the energy: in fact, there are 576 possible export rates in total! On an average, the avoided energy costs rates come out to about 25 per cent of retail electricity rates during those same hours, which means the value of net metering credits decreased by about 75 per cent under NEM 3.0.

Figure 6: Net billing rates are 75% lower than net metering rates



SOURCE: INCRED RESEARCH, COMPANY REPORTS

Figure 7: Consumers rushed to beat an Apr 2023 deadline to lock in the rates for net metering that drove a dramatic increase in homeowners' solar installations for three months; however, that was followed by a 90% decline last May compared to May 2022

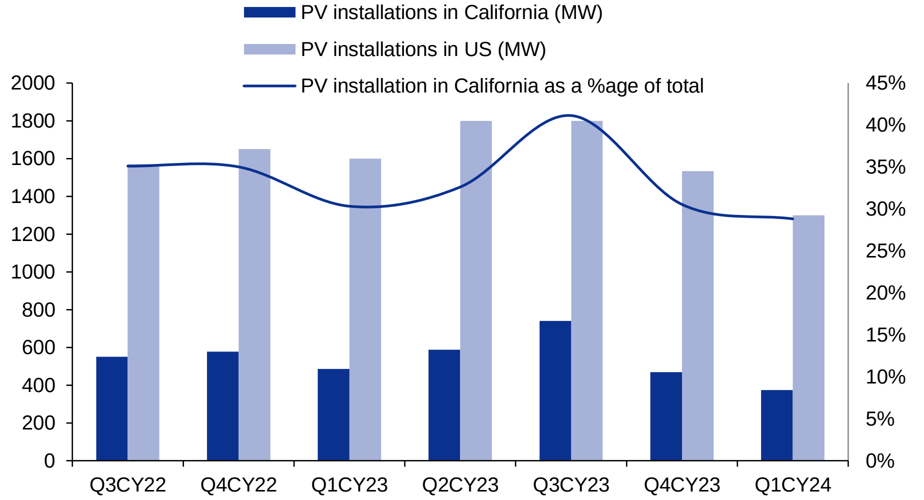


SOURCE: INCRED RESEARCH, COMPANY REPORTS

This drop in installations has, unfortunately, led solar installers to cut as many as 17,000 jobs, representing 22 per cent of total employment in the solar industry. The dramatic drop in California's solar market serves as a good reminder of what can happen when an industry is propped up almost entirely on government subsidies; when the subsidies stop, the industry generally fails in a free market.

Decline in California PV installations will affect the entire US solar market, as California is the largest PV state ➤

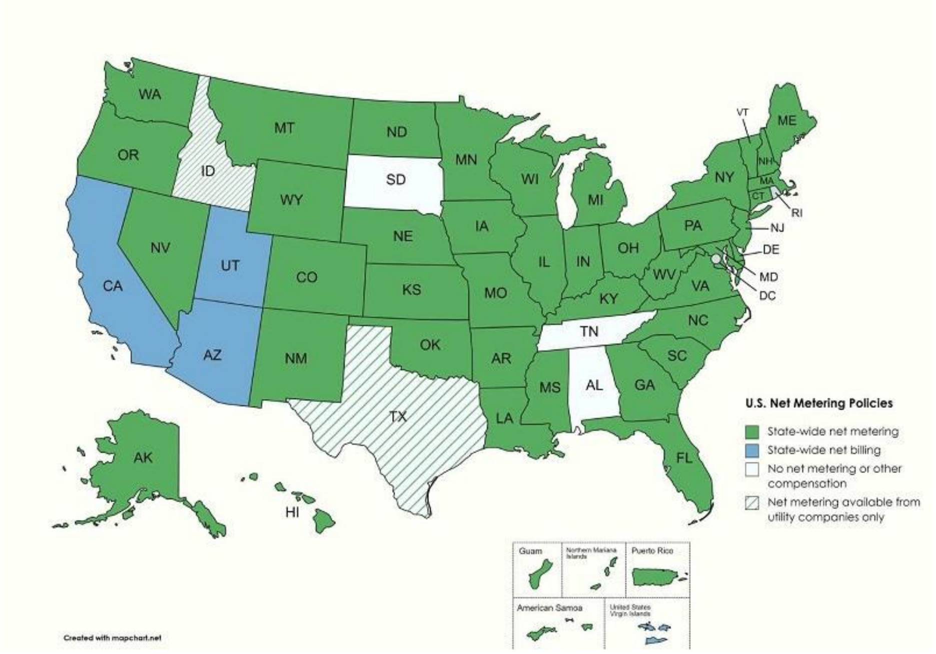
Figure 8: California has been the biggest contributor to the US solar power market



SOURCE: INCRED RESEARCH, COMPANY REPORTS

Other US states are following suit; Arizona, Arkansas, Hawaii and North Carolina are transitioning to net billing

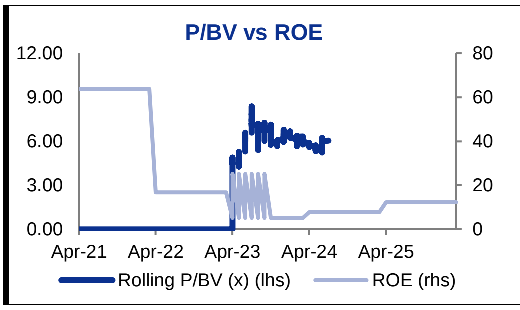
Figure 9: Currently, only three US states (California, Utah and Arizona) have net billing, but more are following suit

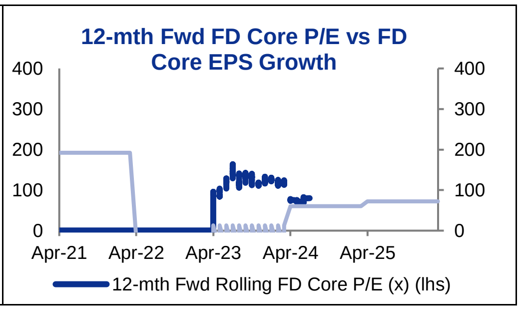


SOURCE: INCRED RESEARCH, COMPANY REPORTS

InCred Equities

BY THE NUMBERS





Profit & Loss

(Rs mn)	Mar-22A	Mar-23A	Mar-24A	Mar-25F	Mar-26F
Total Net Revenues	**8,407**	**9,447**	**8,672**	**9,704**	**12,441**
Gross Profit	**2,866**	**3,380**	**3,126**	**3,590**	**4,504**
Operating EBITDA	**975**	**1,128**	**626**	**879**	**1,327**
Depreciation And Amortisation	(180)	(197)	(229)	(273)	(300)
Operating EBIT	**795**	**932**	**397**	**607**	**1,027**
Financial Income/(Expense)	(248)	(348)	(164)	(171)	(172)
Pretax Income/(Loss) from Assoc.					
Non-Operating Income/(Expense)	109	144	148	162	174
Profit Before Tax (pre-EI)	**656**	**727**	**381**	**598**	**1,029**
Exceptional Items	200				
Pre-tax Profit	**856**	**727**	**381**	**598**	**1,029**
Taxation	(182)	(202)	(101)	(149)	(257)
Exceptional Income - post-tax					
Profit After Tax	**675**	**525**	**280**	**448**	**772**
Minority Interests					
Preferred Dividends					
FX Gain/(Loss) - post tax					
Other Adjustments - post-tax					
Net Profit	**675**	**525**	**280**	**448**	**772**
Recurring Net Profit	517	525	280	448	772
Fully Diluted Recurring Net Profit	**517**	**525**	**280**	**448**	**772**

Cash Flow

(Rs mn)	Mar-22A	Mar-23A	Mar-24A	Mar-25F	Mar-26F
EBITDA	856	727	381	598	1,029
Cash Flow from Invt. & Assoc.					
Change In Working Capital	(805)	(1,125)	(710)	(536)	(1,065)
(Incr)/Decr in Total Provisions					
Other Non-Cash (Income)/Expense	180	197	229	273	300
Other Operating Cashflow	(158)	13			
Net Interest (Paid)/Received	209	244	164	171	172
Tax Paid	(125)	(189)	(101)	(149)	(257)
Cashflow From Operations	**157**	**(133)**	**(37)**	**356**	**179**
Capex	(177)	(273)	(423)	(500)	(500)
Disposals Of FAs/subsidiaries					
Acq. Of Subsidiaries/investments					
Other Investing Cashflow	(6)	2	3	3	3
Cash Flow From Investing	**(184)**	**(271)**	**(420)**	**(497)**	**(497)**
Debt Raised/(repaid)	158	128	(1,421)	66	
Proceeds From Issue Of Shares		798			
Shares Repurchased					
Dividends Paid					
Preferred Dividends					
Other Financing Cashflow	(367)	3,616	(1,917)	809	189
Cash Flow From Financing	**(208)**	**4,542**	**(3,338)**	**874**	**189**
Total Cash Generated	(235)	4,138	(3,796)	734	(129)
Free Cashflow To Equity	**131**	**(276)**	**(1,879)**	**(75)**	**(318)**
Free Cashflow To Firm	**(236)**	**(648)**	**(622)**	**(312)**	**(490)**

SOURCE: INCRED RESEARCH, COMPANY REPORTS

BY THE NUMBERS…cont'd

Balance Sheet

(Rs mn)	Mar-22A	Mar-23A	Mar-24A	Mar-25F	Mar-26F
Total Cash And Equivalents	78	4,219	423	1,157	1,089
Total Debtors	1,774	2,062	1,869	2,021	2,366
Inventories	2,330	3,179	3,163	3,482	4,263
Total Other Current Assets	298	657	235	319	394
Total Current Assets	**4,479**	**10,117**	**5,691**	**6,978**	**8,112**
Fixed Assets	1,162	1,428	1,666	1,890	2,051
Total Investments	53				
Intangible Assets	6	24	21	21	17
Total Other Non-Current Assets	170	315	533	951	463
Total Non-current Assets	**1,391**	**1,767**	**2,220**	**2,862**	**2,530**
Short-term Debt	2,199	2,407	1,108	1,152	1,152
Current Portion of Long-Term Debt					
Total Creditors	1,185	1,418	974	967	1,093
Other Current Liabilities	595	1,603	700	725	737
Total Current Liabilities	**3,979**	**5,428**	**2,782**	**2,845**	**2,982**
Total Long-term Debt	742	656	533	555	555
Hybrid Debt - Debt Component					
Total Other Non-Current Liabilities	188	304	362	362	256
Total Non-current Liabilities	**930**	**960**	**896**	**917**	**810**
Total Provisions	97	130	156	156	156
Total Liabilities	**5,006**	**6,517**	**3,834**	**3,918**	**3,949**
Shareholders Equity	887	5,370	5,473	5,922	6,693
Minority Interests					
Total Equity	**887**	**5,370**	**5,473**	**5,922**	**6,693**

Key Ratios

	Mar-22A	Mar-23A	Mar-24A	Mar-25F	Mar-26F
Revenue Growth	21.8%	12.4%	(8.2%)	11.9%	28.2%
Operating EBITDA Growth	47.5%	15.7%	(44.5%)	40.5%	50.9%
Operating EBITDA Margin	11.6%	11.9%	7.2%	9.1%	10.7%
Net Cash Per Share (Rs)	(43.57)	17.60	(18.54)	(8.37)	(9.41)
BVPS (Rs)	13.50	81.72	83.29	90.11	101.86
Gross Interest Cover	3.20	2.68	2.42	3.55	5.97
Effective Tax Rate	21.2%	27.8%	26.5%	25.0%	25.0%
Net Dividend Payout Ratio					
Accounts Receivables Days	77.99	74.10	82.72	73.14	64.35
Inventory Days	124.75	165.72	208.74	198.37	178.07
Accounts Payables Days	81.00	78.29	78.72	57.95	47.36
ROIC (%)	15.0%	15.0%	5.1%	6.5%	9.9%
ROCE (%)	21.6%	15.2%	5.1%	8.2%	12.8%
Return On Average Assets	12.0%	8.8%	4.1%	6.5%	8.8%

SOURCE: INCRED RESEARCH, COMPANY REPORTS

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any other material conflict of interest at the time of publication of the research report or at the time of public appearance	NO	NO
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