

Oil & Gas and
PetrochemicalsGAIL (BUY)
Target price: Rs207BPCL (BUY)
Target price: Rs544IOCL (HOLD)
Target price: Rs107HPCL (HOLD)
Target price: Rs271RIL (HOLD)
Target price: Rs2,017

Research Analysts:

Vidyardhar Ginde
vidyardhar.ginde@icicisecurities.com
+91 22 6637 7274Aksh Vashishth
aksh.vashishth@icicisecurities.com
+91 22 6637 7386

INDIA

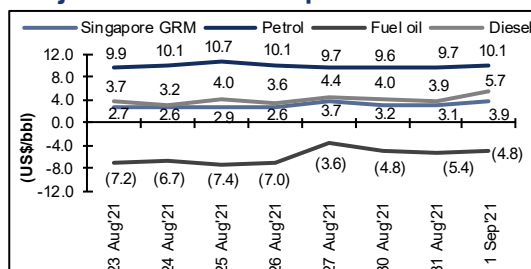
Oil, Gas, Refining & Petrochemicals

Ida: Gas, LNG, oil prices & GRM up, but petrol cracks down

Category four hurricane Ida that hit Louisiana on 29-Aug'21 led to shutdown, of 1) 15.1% of US oil and ~3% of US gas output, 2) 13% of US refining, and 3) 16% of US ethylene, 21% of polyethylene (PE), 41% of PVC and 9% of polypropylene (PP) capacities. As of 1-Sep, 80-83% of oil & gas output, 74% of refining and 80% of petrochemical capacities remain shut. WTI and Brent were up US\$3.4-3.5/bbl (5%) from lows last week, but are down 2-1% from peak. Henry Hub (HH), TTF, UK NBP and JKM spot LNG are up 10-21% from lows of last week, but there are also other factors at play. Reuters' Singapore GRM is up US\$1.2/bbl on 1-Sep vs levels on 23-26-Aug driven by rise in fuel oil, diesel and jet fuel cracks; petrol cracks are down.

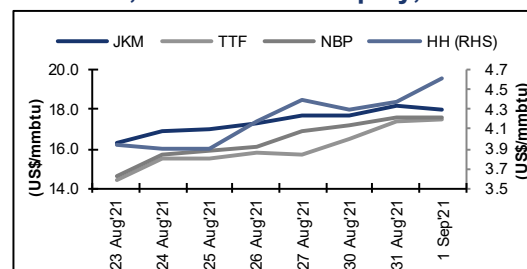
- **Hurricane Ida shut oil & gas output, refineries & petrochemical plants:** Category four hurricane Ida hit Louisiana on 29-Aug'21. It led to shutdown of 1) at peak 1.74m b/d, which was 95.65% of oil output in the Gulf of Mexico (GoM) and 15.1% of total US oil output; 2) at peak 2.11bcf/d, which was 94.5% of gas output in the GoM but just ~3% of US gas output; 3) 2.3m b/d, which is 13% of refining capacity in US, and 5) 6.5mmtpa ethylene, 5mmtpa PE, 3.4mmtpa PVC and 0.8mmtpa PP, which are 16%, 21%, 41% and 9%, respectively, of total US capacities.

GRM rise post Ida driven by FO, diesel and jet fuel cracks but petrol down



Source: Reuters, I-Sec research

HH up 18%, NBP 20%, TTF 21% & JKM LNG 10%; other factors at play, too



Source: Tellurian, I-Sec research

- **12.7% of US oil & 2.7% of gas output still shut:** As of 1-Sep'21, 1.46m b/d or 80% of GoM and 12.7% of US oil output and 1.88bcf/d or 83.2% of GoM and 2.7% of US gas output shut by Ida, still remain shut.
- **9% of US refining capacity still shut:** 1.7m b/d or 9% of US refining capacity was still shut as of 1-Sep'21. Two refineries that have started will not produce at full rates for several days.
- **5-41% of US petrochemical capacity still shut:** Hurricane Ida shut 15.7mmtpa capacity including 6.5mmtpa ethylene, 5mmtpa PE, 3.4mmtpa PVC and 0.8mmtpa PP capacity. 3.1mmtpa capacity including 1mmtpa ethylene, 1.7mmtpa PE and 0.4mmtpa PP capacity is restarting. Thus, still 14% US ethylene and PE, 4.7% of PP and 41% of PVC capacities remain shut.
- **Gas & LNG surge but other factors also at play; GRM rise driven by FO, diesel and jet fuel cracks while petrol cracks down:** WTI and Brent at peak were up US\$3.4-3.5/bbl (5%) vs levels on 23-Aug'21 but are down 2-1% from peak. HH and JKM spot LNG prices are up 18-10% (US\$0.72-1.68/mmbtu) to US\$4.6-18.0/mmbtu while UK NBP and Dutch TTF prices are up 20-21% (US\$3.1-3.0/mmbtu) to US\$17.6-17.5/mmbtu. Rise in European gas prices is also driven by Russia guiding modest gas supply to EU in H2CY21 and rise in EU carbon prices. Singapore GRM, which was US\$2.62-2.9/bbl in 23-26-Aug'21, is up to US\$3.94/bbl on 1-Sep'21 with fuel oil, jet fuel and diesel cracks being the main driver, but petrol cracks are down modestly; **petrol cracks may be down as widespread power outages have led to retail petrol station closures in impacted areas. We believe petrochemical margins may rise if capacities take time to restart with PVC margins likely to gain the most; several PVC producers have announced force majeure.**

Ida: Gas, LNG, oil & GRM up; petrol cracks down

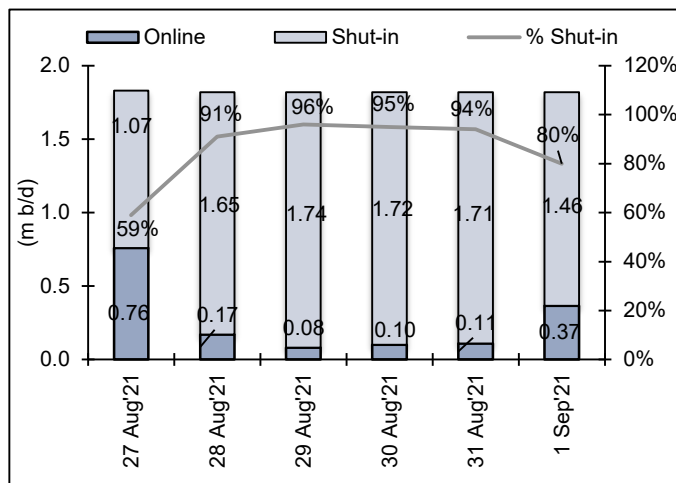
3-13% of US oil & gas, 9% refining & 5-41% of PP/PE/PVC shut

Ida shut 15-3% of US oil & gas output; 13-41% refining & petrochemical

Category four hurricane Ida made landfall in Louisiana on 29-Aug'21. At peak, it led to shutdown of:

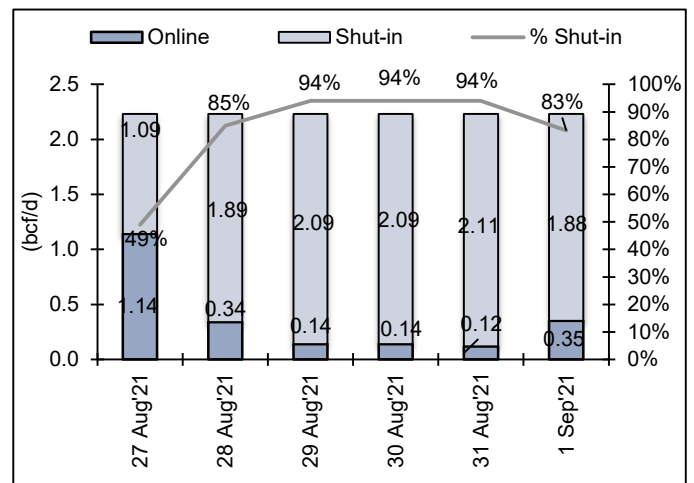
- 1.74m b/d or 15.1% of US and 95.65% of oil output in GoM
- 2.11bcf/d or ~3% of US and 94.47% of gas output in GoM
- 2.3m b/d or 13% of US and 75% of refining capacity in Louisiana
- 6.5mmtpa (16%) of ethylene, 5mmtpa (21%) of PE, 3.4mmtpa (41%) of PVC, and 0.8mmtpa (9%) of US PP capacity.

Chart 1: 1.46m b/d or 80% of GoM and 12.7% of US oil output still shut as of 1-Sep'21



Source: US DoE, I-Sec research

Chart 2: 1.88bcf/d or 83.2% of GoM and 2.7% of US gas output still shut as of 1-Sep'21



Source: US DoE, I-Sec research

12.7% of US oil and 2.7% of US gas output still shut as of 1-Sep'21

Hurricane Ida led to the shutdown of 15.1% of US oil output and ~3% of US gas output at peak. Bureau of Safety and Environmental Enforcement (BSEE) estimates that as of end of 1-Sep'21:

- 1.46m b/d or 12.7% of US and 80% of GoM oil output was still shut.
- 1.88bcf/d or 2.7% of US and 83.2% of GoM gas output was still shut.

9% of US refining capacity still shut as of 1-Sep'21

Hurricane Ida led to shutdown of 2.3m b/d or 13% of US and 75% of refining capacity in Louisiana. 1.7m b/d or 9% of US refining capacity still remains shut. Two refineries restarted on 31-Aug'21, but are unlikely to operate at full rates for several days.

Table 1: 2.3m b/d of US refining capacity shut at peak; 1.7m b/d still shut

Company	Refinery	Capacity (m b/d)	Status
Marathon	Garyville	0.6	Shut
Phillips 66	Belle Chasse	0.3	Shut
PBF Energy	Chalmette	0.2	Shut
Shell	Norco	0.2	Shut
Valero	Meraux	0.1	Shut
Valero	Norco	0.2	Shut
Others		0.1	Shut
Total shut		1.7	
ExxonMobil	Baton Rouge	0.5	Restarting

Source: S&P Global Platts, I-Sec research

5-41% of US PP, PE and PVC capacities still shut as of 1-Sep'21

Hurricane Ida shut 15.7mmtpa of US petrochemical capacities including 6.5mmtpa (16%) of ethylene, 5mmtpa (21%) of PE, 3.4mmtpa (41%) of PVC and 0.8mmtpa (9%) of US PP capacity. As of 31-Aug'21, 3.1mmtpa of US petrochemical capacities are in the process of restarting while 12.6mmtpa are still shut including:

- 5.5mmtpa (14%) ethylene capacity
- 3.3mmtpa (14%) PE capacity
- 3.4mmtpa (41%) PVC capacity
- 0.4mmtpa (5%) of PP capacity

Table 2: 5.5mmtpa US ethylene, 3.3mmtpa PE, 3.4mmtpa PVC and 0.4mmtpa PP capacities shut still shut as of 1-Sep'21

	Shut (mmtpa)	Restarting (mmtpa)	Total shut at peak (mmtpa)
Ethylene	5.5	1.0	6.5
PE	3.3	1.7	5.0
PVC	3.4	-	3.4
PP	0.4	0.4	0.8
Total	12.6	3.1	15.7

Source: S&P Global Platts, I-Sec research

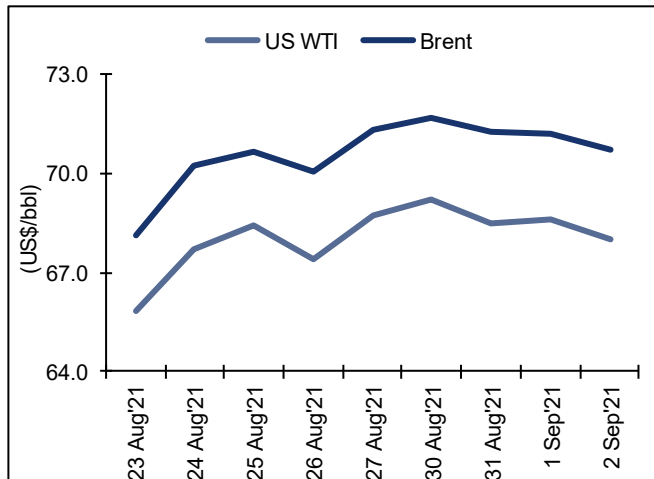
Petrochemical, especially, PVC margins to rise if long delay in restarts

We believe petrochemical margins may rise if capacities take time to restart. PVC margins are likely to gain the most given capacities along the chain from chlorine to EDC to VCM to PVC that have been shutdown due to Ida; **several PVC producers have announced *force majeure***.

Gas, LNG, oil prices & GRM strengthen; petrol cracks down**Brent and WTI up 5% at peak; down 1.3-1.7% from peak**

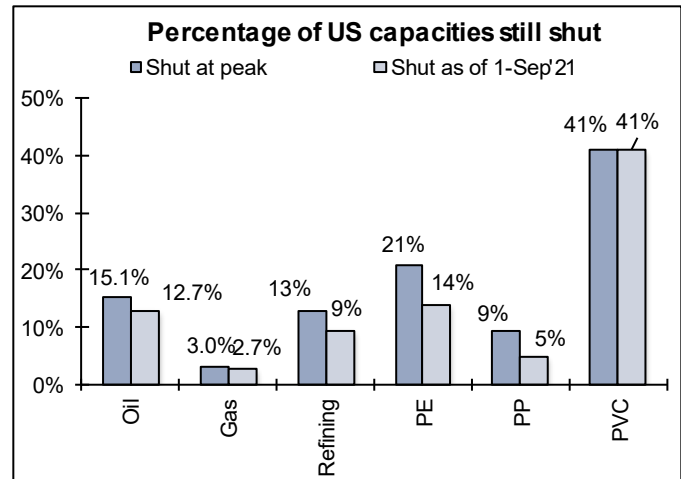
Brent and WTI prices surged initially as over 15% of US oil output was shut due to hurricane Ida. At peak, WTI and Brent were up US\$3.4-3.5/bbl (5%) vs levels on 23-Aug'21. However, Brent and WTI have corrected US\$0.9-1.2/bbl (1.3-1.7%) from peak as US oil output is gradually recovering and 1.7m b/d capacity refineries remain shut, which would hit demand for crude.

Chart 3: Brent and WTI up 5% to US\$71.7-69.2/bbl at peak; down 1-2% from peak to US\$70.7-68.0/bbl



Source: Bloomberg, I-Sec research

Chart 4: 12.7-2.7% of US oil & gas, 9% of refining and 5-41% of petrochemical capacity still shut



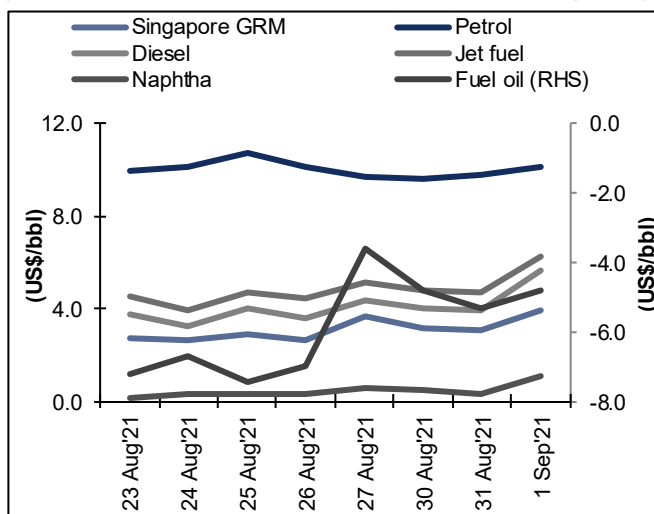
Source: S&P Global Platts, I-Sec research

10-21% rise in JKM spot LNG, HH, TTF and UK NBP prices

Rise in Henry Hub (HH), JKM spot LNG, Dutch TTF and UK NBP prices from lows of 23-Aug'21 has been steep as follows:

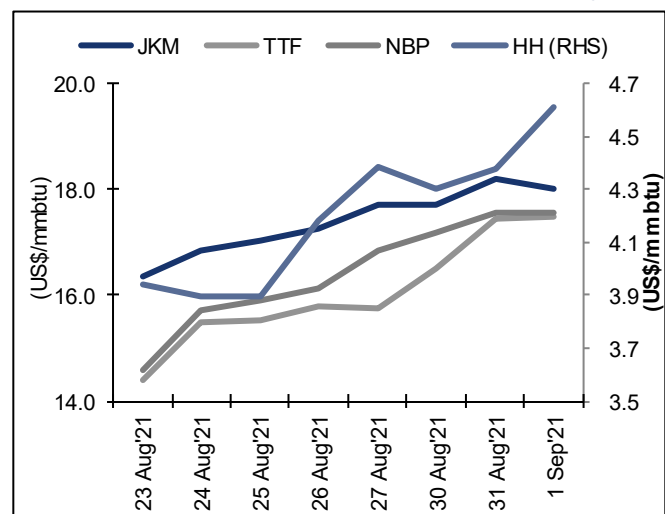
- HH price was up US\$0.72/mmbtu (18%) to US\$4.62/mmbtu on 1-Sep'21.
- JKM spot LNG price was up US\$1.68/mmbtu (10%) to US\$18.02/mmbtu on 1-Sep'21.
- Dutch TTF price was up US\$3.06/mmbtu (21%) to US\$17.47/mmbtu on 1-Sep'21.
- UK NBP price was up US\$2.97/mmbtu (20%) to US\$17.57/mmbtu on 1-Sep'21.

Chart 5: GRM rise post Ida driven by FO, diesel & jet fuel cracks but petrol cracks down marginally



Source: Reuters, I-Sec research

Chart 6: JKM spot LNG & HH up 10-18%, NBP 20% & TTF 21% post Ida, but other factors at play, too



Source: Tellurian, I-Sec research

European gas price surge also driven by other factors

Rise in European gas prices is also driven by the following factors other than impact of hurricane Ida:

- On 30-Aug'21, Gazprom guided Russian gas supply to Europe in H2CY21E at ~89bcm vs over 94bcm in H1; gas supply to Europe in CY21E was guided at 183bcm by Gazprom and given the over 94bcm supply in H1, it implies supply in H2CY21E of ~89bcm. Implied Russian gas supply to Europe would be down YoY at a time when EU gas storage on 30-Aug'21 was just 67% full vs 91.35% full a year earlier on 30-Aug'20.
- Surge in EU carbon price to a new high recently. High EU carbon price makes gas based power generation more viable vs coal based power generation thereby boosting demand for gas.

Singapore GRM up driven by FO, diesel and jet fuel cracks rise

Singapore GRM, which was US\$2.62-2.9/bbl in 23-26 Aug'21 is up to US\$3.94/bbl on 1-Sep'21. Singapore GRM rose to US\$3.66/bbl on 27-Aug'21 (just before the hurricane as shutdown of refineries began) from low of US\$2.62/bbl on 24-Aug'21 but corrected to US\$3.17-3.06/bbl on 30-31 Aug'21 before rebounding on 1-Sep'21. The rise in Singapore GRM to US\$3.94/bbl on 1-Sep'21 from US\$2.62/bbl on 24-Aug'21 was driven by rise of:

- US\$1.9/bbl in fuel oil cracks from minus US\$6.7/bbl to minus US\$4.8/bbl
- US\$2.3/bbl in jet fuel cracks from US\$3.9/bbl to US\$6.2/bbl
- US\$2.5/bbl in diesel cracks from US\$3.2/bbl to US\$5.7/bbl
- US\$0.8/bbl in naphtha cracks from US\$0.3/bbl to US\$1.1/bbl

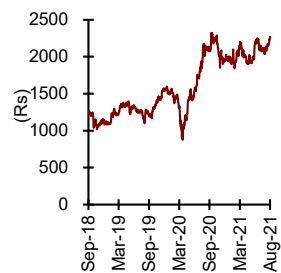
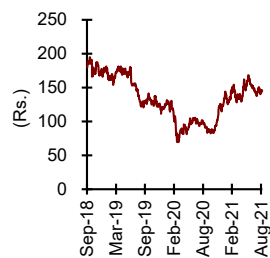
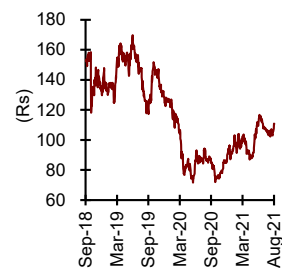
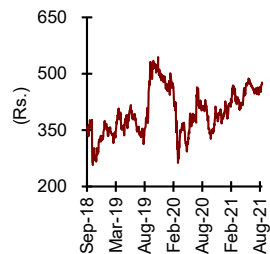
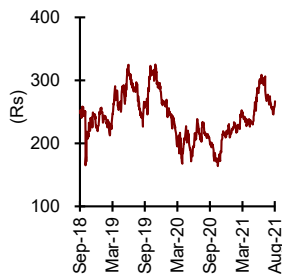
Petrol cracks at US\$9.6-10.1/bbl vs US\$9.9-10.7/bbl last week

Singapore GRM rise was despite petrol cracks being flat at US\$10.1/bbl. Petrol cracks after Ida struck at US\$9.6-9.7/bbl on 30-31 Aug'21 are lower than US\$9.9-10.7/bbl last week, but rebounded to US\$10.1/bbl on 1-Sep'21. Petrol cracks may be down as widespread power outages have led to retail petrol station closures in impacted areas.

Risks to recommendation

Upside/Downside risks to our recommendation are:

- **RIL:** 1) GRM being lower than assumed; 2) higher/lower ARPU than estimated; 3) petrochemical EBITDA higher/lower than estimated; 4) net debt significantly higher/lower than our estimate.
- **GAIL:** 1) Gas marketing EBITDA is lower than estimate; 2) lower than estimated gas transmission volumes & EBITDA.
- **IOC:** Higher/Lower than estimated auto fuel marketing margin and GRM.
- **BPCL:** 1) Privatisation doesn't go through, or bid price is sharply lower than estimated; 2) lower than estimated auto fuel marketing margin and GRM.
- **HPCL:** Higher/Lower than estimated auto fuel marketing margin and GRM.

Price charts**RIL****GAIL****IOC****BPCL****HPCL**

Source: Bloomberg

"In case of industry/sector reports or a report containing multiple stocks, the rating/recommendation for a particular stock may be based on the last released stock specific report for that company."

This report may be distributed in Singapore by ICICI Securities, Inc. (Singapore branch). Any recipients of this report in Singapore should contact ICICI Securities, Inc. (Singapore branch) in respect of any matters arising from, or in connection with, this report. The contact details of ICICI Securities, Inc. (Singapore branch) are as follows: Address: 10 Collyer Quay, #40-92 Ocean Financial Tower, Singapore - 049315, Tel: +65 6232 2451 and email: navneet_babbar@icicisecuritiesinc.com, Rishi_agrawal@icicisecuritiesinc.com.

"In case of eligible investors based in Japan, charges for brokerage services on execution of transactions do not in substance constitute charge for research reports and no charges are levied for providing research reports to such investors."

*New I-Sec investment ratings (all ratings based on absolute return; All ratings and target price refers to 12-month performance horizon, unless mentioned otherwise).
BUY: >15% return; ADD: 5% to 15% return; HOLD: Negative 5% to Positive 5% return; REDUCE: Negative 5% to Negative 15% return; SELL: < negative 15% return*

ANALYST CERTIFICATION

I/We, Vidyadhar Ginde (A.C.A. GRAD.CWA); Aksh Vashishth MBA, authors and the names subscribed to this report, hereby certify that all of the views expressed in this research report accurately reflect our views about the subject issuer(s) or securities. We also certify that no part of our compensation was, is, or will be directly or indirectly related to the specific recommendation(s) or view(s) in this report. Analysts are not registered as research analysts by FINRA and are not associated persons of the ICICI Securities Inc. It is also confirmed that above mentioned Analysts of this report have not received any compensation from the companies mentioned in the report in the preceding twelve months and do not serve as an officer, director or employee of the companies mentioned in the report.

Terms & conditions and other disclosures:

ICICI Securities Limited (ICICI Securities) is a full-service, integrated investment banking and is, inter alia, engaged in the business of stock brokering and distribution of financial products.

ICICI Securities is Sebi registered stock broker, merchant banker, investment adviser, portfolio manager and Research Analyst. ICICI Securities is registered with Insurance Regulatory Development Authority of India Limited (IRDAI) as a composite corporate agent and with PFRDA as a Point of Presence. ICICI Securities Limited Research Analyst SEBI Registration Number – INH000000990. ICICI Securities Limited SEBI Registration is INZ000183631 for stock broker. ICICI Securities is a subsidiary of ICICI Bank which is India's largest private sector bank and has its various subsidiaries engaged in businesses of housing finance, asset management, life insurance, general insurance, venture capital fund management, etc. ("associates"), the details in respect of which are available on www.icicibank.com.

ICICI Securities is one of the leading merchant bankers/ underwriters of securities and participate in virtually all securities trading markets in India. We and our associates might have investment banking and other business relationship with a significant percentage of companies covered by our Investment Research Department. ICICI Securities and its analysts, persons reporting to analysts and their relatives are generally prohibited from maintaining a financial interest in the securities or derivatives of any companies that the analysts cover.

Recommendation in reports based on technical and derivative analysis centre on studying charts of a stock's price movement, outstanding positions, trading volume etc as opposed to focusing on a company's fundamentals and, as such, may not match with the recommendation in fundamental reports. Investors may visit icicidirect.com to view the Fundamental and Technical Research Reports.

Our proprietary trading and investment businesses may make investment decisions that are inconsistent with the recommendations expressed herein.

ICICI Securities Limited has two independent equity research groups: Institutional Research and Retail Research. This report has been prepared by the Institutional Research. The views and opinions expressed in this document may or may not match or may be contrary with the views, estimates, rating, and target price of the Retail Research.

The information and opinions in this report have been prepared by ICICI Securities and are subject to change without any notice. The report and information contained herein is strictly confidential and meant solely for the selected recipient and may not be altered in any way, transmitted to, copied or distributed, in part or in whole, to any other person or to the media or reproduced in any form, without prior written consent of ICICI Securities. While we would endeavour to update the information herein on a reasonable basis, ICICI Securities is under no obligation to update or keep the information current. Also, there may be regulatory, compliance or other reasons that may prevent ICICI Securities from doing so. Non-rated securities indicate that rating on a particular security has been suspended temporarily and such suspension is in compliance with applicable regulations and/or ICICI Securities policies, in circumstances where ICICI Securities might be acting in an advisory capacity to this company, or in certain other circumstances.

This report is based on information obtained from public sources and sources believed to be reliable, but no independent verification has been made nor is its accuracy or completeness guaranteed. This report and information herein is solely for informational purpose and shall not be used or considered as an offer document or solicitation of offer to buy or sell or subscribe for securities or other financial instruments. Though disseminated to all the customers simultaneously, not all customers may receive this report at the same time. ICICI Securities will not treat recipients as customers by virtue of their receiving this report. Nothing in this report constitutes investment, legal, accounting and tax advice or a representation that any investment or strategy is suitable or appropriate to your specific circumstances. The securities discussed and opinions expressed in this report may not be suitable for all investors, who must make their own investment decisions, based on their own investment objectives, financial positions and needs of specific recipient. This may not be taken in substitution for the exercise of independent judgment by any recipient. The recipient should independently evaluate the investment risks. The value and return on investment may vary because of changes in interest rates, foreign exchange rates or any other reason. ICICI Securities accepts no liabilities whatsoever for any loss or damage of any kind arising out of the use of this report. Past performance is not necessarily a guide to future performance. Investors are advised to see Risk Disclosure Document to understand the risks associated before investing in the securities markets. Actual results may differ materially from those set forth in projections. Forward-looking statements are not predictions and may be subject to change without notice.

ICICI Securities or its associates might have managed or co-managed public offering of securities for the subject company or might have been mandated by the subject company for any other assignment in the past twelve months.

ICICI Securities or its associates might have received any compensation from the companies mentioned in the report during the period preceding twelve months from the date of this report for services in respect of managing or co-managing public offerings, corporate finance, investment banking or merchant banking, brokerage services or other advisory service in a merger or specific transaction.

ICICI Securities or its associates might have received any compensation for products or services other than investment banking or merchant banking or brokerage services from the companies mentioned in the report in the past twelve months.

ICICI Securities encourages independence in research report preparation and strives to minimize conflict in preparation of research report. ICICI Securities or its associates or its analysts did not receive any compensation or other benefits from the companies mentioned in the report or third party in connection with preparation of the research report. Accordingly, neither ICICI Securities nor Research Analysts and their relatives have any material conflict of interest at the time of publication of this report.

Compensation of our Research Analysts is not based on any specific merchant banking, investment banking or brokerage service transactions.

ICICI Securities or its subsidiaries collectively or Research Analysts or their relatives do not own 1% or more of the equity securities of the Company mentioned in the report as of the last day of the month preceding the publication of the research report. Vidyadhar Ginde (A.C.A. GRAD.CWA), Research Analyst of this report, owns insignificant (20) number of equity shares in IOC, (22) number of equity shares in HPCL and (900) number of equity shares in ONGC mentioned in the report.

Since associates of ICICI Securities and ICICI Securities as a entity are engaged in various financial service businesses, they might have financial interests or beneficial ownership in various companies including the subject company/companies mentioned in this report.

ICICI Securities may have issued other reports that are inconsistent with and reach different conclusion from the information presented in this report.

Neither the Research Analysts nor ICICI Securities have been engaged in market making activity for the companies mentioned in the report.

We submit that no material disciplinary action has been taken on ICICI Securities by any Regulatory Authority impacting Equity Research Analysis activities.

This report is not directed or intended for distribution to, or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction, where such distribution, publication, availability or use would be contrary to law, regulation or which would subject ICICI Securities and affiliates to any registration or licensing requirement within such jurisdiction. The securities described herein may or may not be eligible for sale in all jurisdictions or to certain category of investors. Persons in whose possession this document may come are required to inform themselves of and to observe such restriction.

This report has not been prepared by ICICI Securities, Inc. However, ICICI Securities, Inc. has reviewed the report and, in so far as it includes current or historical information, it is believed to be reliable, although its accuracy and completeness cannot be guaranteed.