

Sector update

Oil & Gas and
Petrochemicals

GAIL (BUY)

Target price: Rs207

BPCL (BUY)

Target price: Rs544

IOCL (HOLD)

Target price: Rs107

HPCL (HOLD)

Target price: Rs271

RIL (HOLD)

Target price: Rs2,017

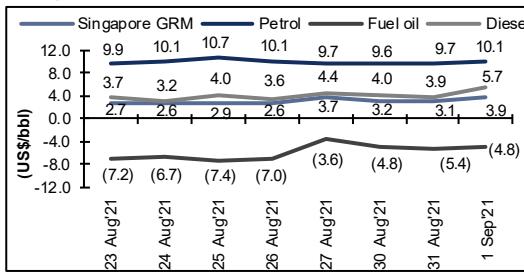
INDIA

Oil, Gas, Refining & Petrochemicals

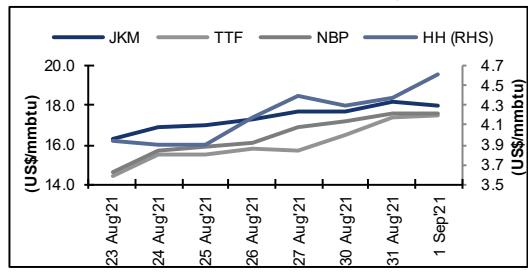
Ida: Gas, LNG, oil prices & GRM up, but petrol cracks down

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 majeures.**

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

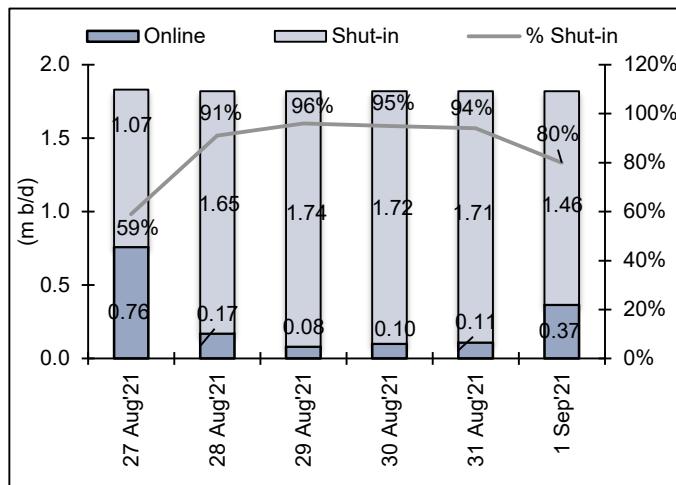
3-13% of US oil & gas, 9% refining & 5-41% of PP/PE/PVC shut

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:

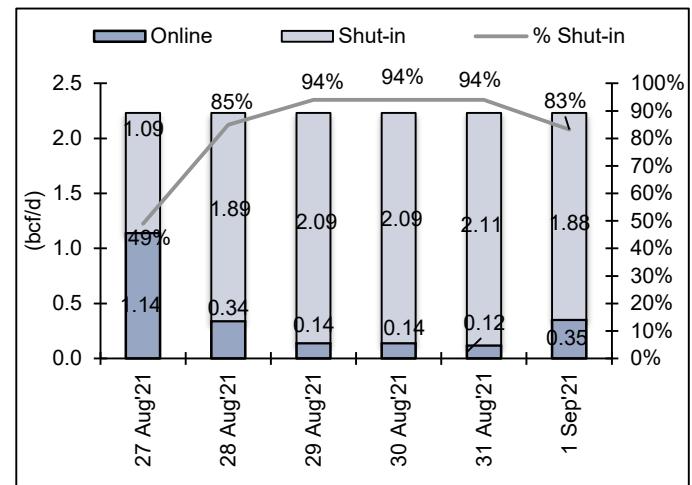
- 1.74m b/d or 15.1% of US and 95.65% of oil output in GoM
- 2.11bcf/d or ~3% of US and 94.47% of gas output in GoM
- 2.3m b/d or 13% of US and 75% of refining capacity in Louisiana
- 6.5mmtpa (16%) of ethylene, 5mmtpa (21%) of PE, 3.4mmtpa (41%) of PVC, and 0.8mmtpa (9%) of US PP capacity.

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

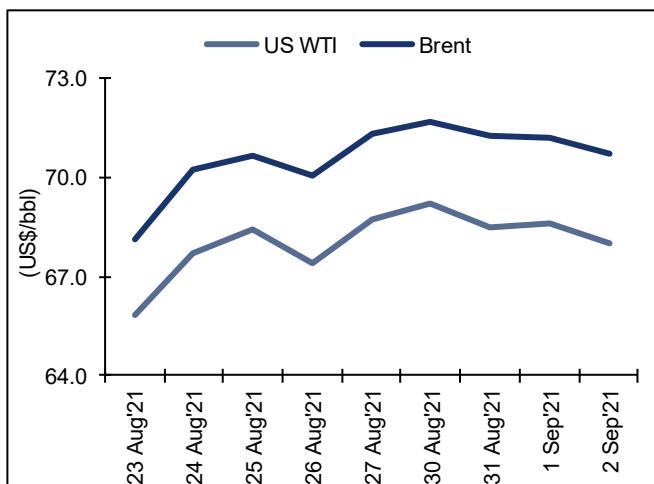
Petrochemical, especially, PVC margins to rise if long delay in restarts

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 majeures**.

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

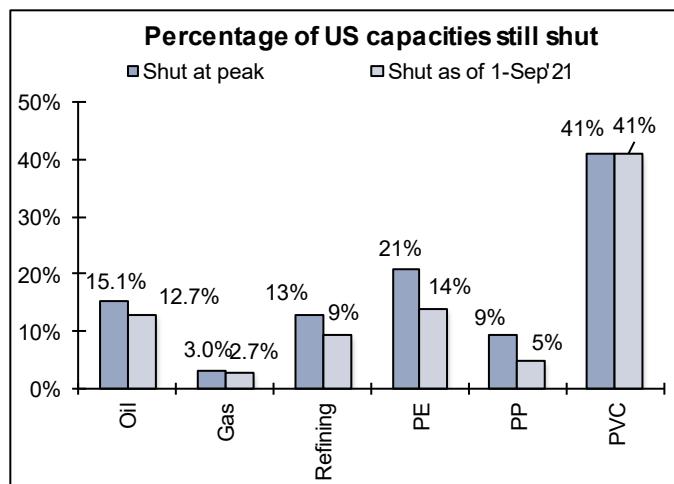
Brent and WTI prices surged initially as over 15% of US oil output was shut due to hurricane Ida. At peak, WTI and Brent were up US\$3.4-3.5/bbl (5%) vs levels on 23-Aug'21. However, Brent and WTI have corrected US\$0.9-1.2/bbl (1.3-1.7%) from peak as US oil output is gradually recovering and 1.7m b/d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



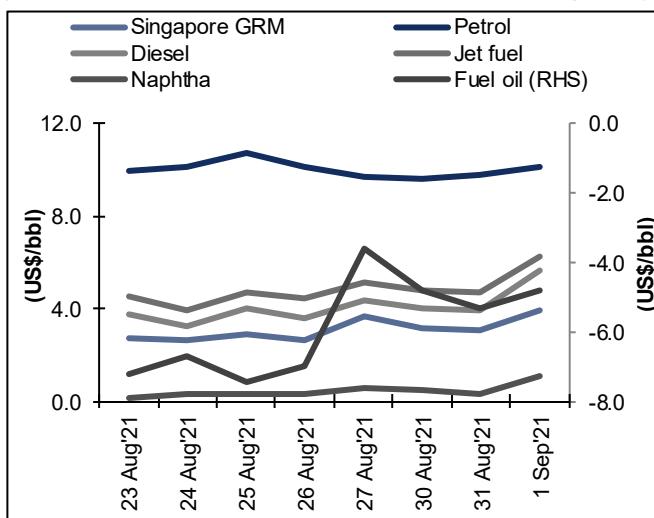
Source: S&P Global Platts, I-Sec research

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:

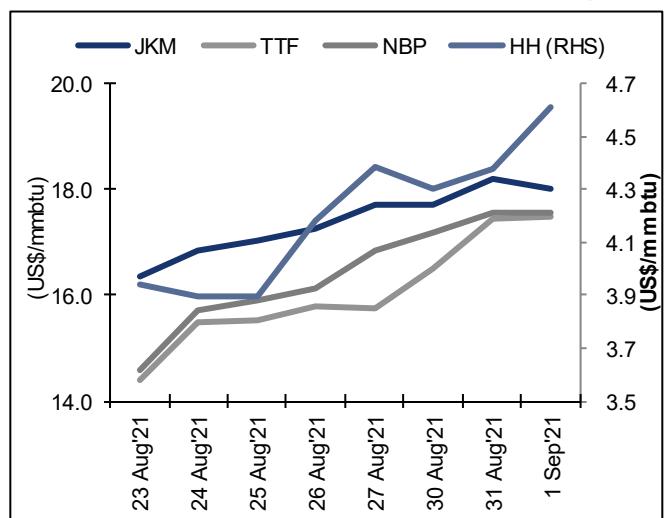
- HH price was up US\$0.72/mmbtu (18%) to US\$4.62/mmbtu on 1-Sep'21.
- JKM spot LNG price was up US\$1.68/mmbtu (10%) to US\$18.02/mmbtu on 1-Sep'21.
- Dutch TTF price was up US\$3.06/mmbtu (21%) to US\$17.47/mmbtu on 1-Sep'21.
- UK NBP price was up US\$2.97/mmbtu (20%) to US\$17.57/mmbtu on 1-Sep'21.

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

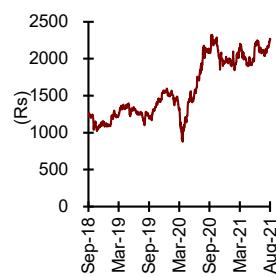
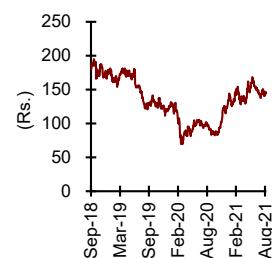
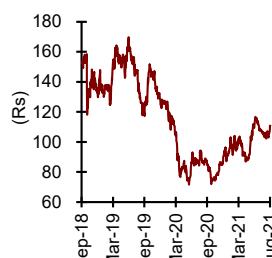
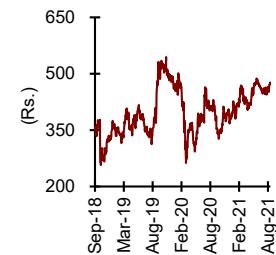
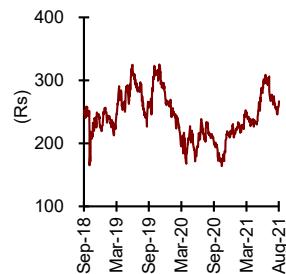
Petrol cracks at US\$9.6-10.1/bbl vs US\$9.9-10.7/bbl last week

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.

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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

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