

# Oil and Gas



## OPEC+ cuts to support crude price ~USD 80/bbl

OPEC+ has announced additional “voluntary” cuts of 2.2mmbpd for 1QCY24 to maintain balance in oil markets. However, excluding a) extension of Saudi Arabia and Russia’s existing voluntary cuts of 1.3mmbpd and b) reduction of Russia’s fuel exports by 0.2mmbpd, the effective additional crude output cut is 0.7mmbpd. Further, as it is a voluntary cut, and not a formal cut, there is likely to be some scepticism on its actual implementation. We still believe the strong pricing power of OPEC+ will continue to support Brent crude price at ~USD 80/bbl, which is the fiscal break-even crude price for Saudi Arabia. This price is a sweet spot for ONGC/Oil India. We maintain BUY on ONGC (TP INR 225) and Oil India (TP INR 355) given the strong 6-8% dividend play and also because CMP is discounting ~USD 55-60/bbl net crude realisation. However, the market’s optimism on OMCs will depend on whether crude sustains below ~USD 80/bbl. OMCs’ valuations are trading at their historical average (FY24 P/B at 1.0x for HPCL/IOCL and 1.4x for BPCL) after the recent rally.

- **OPEC+ announces additional “voluntary” cuts of 2.2mmbpd for 1QCY24; however, taking past announcements into account, effective additional crude output cut is 0.7mmbpd:** OPEC+ has [announced](#) additional “voluntary” cuts of 2.2mmbpd for 1QCY24 to maintain stability in the oil markets. The countries that have agreed to these additional voluntary cuts are Saudi Arabia (1,000kbpd), Russia (500kbpd – 300kbpd of crude and 200kbpd of oil product exports), Iraq (223kbpd), UAE (163kbpd), Kuwait (135kbpd), Kazakhstan (82kbpd), Algeria (51kbpd), and Oman (42kbpd). These cuts are over and above June’2023 agreement whereby OPEC+ extended its output cuts until end-CY24 — **Exhibit 5**. However, the 2.2mmbpd cuts include **a)** extension of the existing voluntary cuts of 1.3mmbpd by Saudi Arabia (1.0mmbpd) and Russia (0.3mmbpd); this was originally valid till end-CY23, and **b)** reduction of Russia’s fuel exports by 0.2mmbpd. Hence, the effective incremental voluntary crude output cut is 0.7mmbpd, and it is by OPEC+ countries other than Saudi Arabia and Russia. Further, given that it is a voluntary cut, and not a formal cut, there is likely to be some scepticism on its actual implementation. The next OPEC+ meeting scheduled for 1<sup>st</sup> Jun’24.
- **OPEC+ output cuts to keep oil market in deficit in 1QCY24; likely to support Brent ~USD 80/bbl:** OPEC+ output cuts are likely to keep the oil market in deficit in 1QCY24. We still believe OPEC+ will continue to use its strong pricing power to support Brent crude price ~USD 80/bbl, which is the fiscal break-even crude price needed by Saudi Arabia (**Exhibit 7**). The pricing power of OPEC+ has got strengthened over the past 2-3 years due to: **a)** US oil production continuing to be at ~13.2mmbpd (vs. pre-Covid peak of ~13.1mmbpd) as US shale investors have become disciplined in capital investment (**Exhibit 9-10**), and **b)** OPEC+ having shown strong ability to cut output (by ~10mmbpd) in early CY20 to offset the ~10% decline in global oil demand post Covid. Moreover, OPEC+ has enough headroom to cut output by another 2-3mmbpd to offset any macro-related risk to global oil demand growth. Hence, we believe the new normal for Brent crude price may be ~USD 80/bbl (except in the event of a global macro shock). This is a departure from the pre-Covid normal price of around USD 60-65/bbl, which was driven by marginal cost of US shale oil production.
- **Moderation of global oil demand growth in CY24 may cap sharp rise in oil prices:** IEA expects CY23 global oil demand growth to be strong at ~2.4mmbpd (at 102mmbpd) due to post-Covid recovery in the Chinese economy. But it sees demand growth moderating in CY24 to 0.9mmbpd (at 102.9mmbpd) due to rise in penetration of electric vehicles, efficiency gains and macro headwinds. This is likely to limit the sharp rise in oil prices.
- **ONGC/Oil India key beneficiaries of high crude price:** We maintain BUY on [ONGC](#) (TP INR 225) and [Oil India](#) (TP INR 355) given strong dividend play (of 6-8%) and also because CMP is discounting ~USD 55-60/bbl net crude realisation (**Exhibit 21-22**). Our TP, on the other hand, is based on USD 65/bbl net crude realisation, and various changes in windfall tax that suggest the government is fine with ONGC/Oil India making a net crude realisation of ~USD 75/bbl. Brent crude price of USD 75-80/bbl is a sweet spot for ONGC/Oil India as it improves visibility for net crude realisation of USD 75/bbl by eliminating the risk of ad hoc fuel subsidy burden.
- **Optimism on OMCs will be contingent on crude sustaining below ~USD 80/bbl:** The market’s optimism on OMCs will depend on whether crude sustains below ~USD 80/bbl. After the recent rally, OMCs’ FY24 P/B valuations (at ~1.0x for HPCL/IOCL and 1.4x for BPCL) are trading at their historical average. At spot Brent price and actual product cracks, OMCs’ gross auto-fuel marketing margin has risen to +INR 6.4/tr (vs. historical margin of +INR 3.5/tr) and gross auto-fuel integrated margin has gone up to +INR 15.2/tr (vs. historical margin of +INR 11.4/tr) - **Exhibit 23**.

Dayanand Mittal

dayanand.mittal@jmf.com | Tel: (+91 96) 1938 8870

Shivam Gupta

shivam.gupta@jmf.com | Tel: (91 22) 66303082

JM Financial Research is also available on: Bloomberg - JMFR <GO>, Thomson Publisher & Reuters, S&P Capital IQ, FactSet and Visible Alpha

Please see Appendix I at the end of this report for Important Disclosures and Disclaimers and Research Analyst Certification.



## Exhibit 5. OPEC+ output still continues to lag its target by ~2mmbpd

Countries	Oct 2023 Supply	May-Dec 2023 Target excluding Saudi's 1mmbpd and Russia's 0.3mmbpd voluntary cut	Oct 2023 production vs target	Sustainable Capacity <sup>1</sup>	Spare Capacity in Oct'23	CY24 Target excluding 1QCY24 voluntary cuts	Voluntary cuts for 1QCY24	Effective target for 1QCY24 post voluntary cuts
<b>OPEC</b>								
Algeria	0.96	0.96	0.0	1.0	0.0	1.01	0.05	0.96
Angola	1.15	1.46	-0.3	1.1	0.0	1.28		1.28
Congo	0.26	0.31	-0.1	0.3	0.0	0.28		0.28
Equatorial Guinea	0.06	0.12	-0.1	0.1	0.0	0.07		0.07
Gabon	0.22	0.17	0.0	0.2	0.0	0.18		0.18
Iraq	4.38	4.22	0.2	4.8	0.4	4.43	0.22	4.21
Kuwait	2.57	2.55	0.0	2.8	0.3	2.68	0.14	2.54
Nigeria	1.35	1.74	-0.4	1.3	0.0	1.38		1.38
Saudi Arabia	9.01	9.98	-1.0	12.2	3.2	10.48	1.00	9.48
UAE	3.25	2.88	0.4	4.2	1.0	3.22	0.16	3.06
<b>Total OPEC-10</b>	<b>23.21</b>	<b>24.4</b>	<b>-1.2</b>	<b>27.9</b>	<b>4.7</b>	<b>24.99</b>	<b>1.57</b>	<b>23.42</b>
Iran <sup>3</sup>	3.10			3.8				
Libya <sup>3</sup>	1.13			1.2	0.1			
Venezuela <sup>3</sup>	0.77			0.8	0.0			
<b>Total OPEC</b>	<b>28.21</b>			<b>33.8</b>	<b>4.8</b>			
Azerbaijan	0.49	0.68	-0.2	0.5	0.1	0.55		0.55
Kazakhstan	1.63	1.55	0.1	1.7	0.0	1.63	0.08	1.55
Mexico <sup>4</sup>	1.67	1.75	-0.1	1.7	0.0	1.75		1.75
Oman	0.80	0.80	0.0	0.9	0.1	0.84	0.04	0.80
Russia	9.53	9.98	-0.5	10.0	0.0	9.83	0.30	9.53
Others <sup>5</sup>	0.85	1.06	-0.2	0.9	0.0	0.87		0.87
<b>Total Non-OPEC</b>	<b>14.97</b>	<b>15.8</b>	<b>-0.9</b>	<b>15.6</b>	<b>0.2</b>	<b>15.5</b>	<b>0.42</b>	<b>15.05</b>
<b>OPEC+<sup>19</sup> in cut deal<sup>3</sup></b>	<b>38.2</b>	<b>40.2</b>	<b>-2.0</b>	<b>43.5</b>	<b>4.9</b>	<b>40.5</b>	<b>2.00</b>	<b>38.47</b>
<b>Total OPEC+</b>	<b>43.18</b>			<b>49.3</b>	<b>5.0</b>			

Source: IEA, Note: Production excludes condensates; 1. Capacity levels can be reached within 90 days and sustained for extended period; 2. Excludes shut in Iranian, Russian crude; 3. Iran, Libya, Venezuela exempt from cuts; 4. Mexico excluded from OPEC+ compliance; only cut in May, June 2020; 5. Bahrain, Brunei, Malaysia, Sudan and South Sudan.

## Exhibit 6. OPEC+ supply in Oct'23 was at 43.2mmbpd vs. 44.8mmbpd in Sep'22 driven by output cuts by Saudi (2.0mmbpd), Kuwait (0.3mmbpd), partly offset by higher output from Iran (0.6mmbpd), Nigeria (0.4mmbpd) and Kazakhstan (0.4mmbpd)

Countries	Sep 2022 Supply	Oct 2023 Supply	Sep 2022 Target	Nov 2022 Target	May-Dec 2023 Target excluding Saudi's 1mmbpd and Russia's 0.3mmbpd voluntary cut	CY24 Target excluding 1QCY24 voluntary cuts	Increase in actual cut in Oct'23 vs Sep'22	Increase in cut target Oct'23 vs Sep'22 (excluding Saudi's 1mmbpd and Russia's 0.3mmbpd voluntary cut)
<b>OPEC</b>								
Algeria	1.0	1.0	1.1	1.0	1.0	1.0	-0.1	-0.1
Angola	1.1	1.2	1.5	1.5	1.5	1.3	0.1	-0.1
Congo	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0
Equatorial Guinea	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Gabon	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0
Iraq	4.6	4.4	4.7	4.4	4.2	4.4	-0.2	-0.4
Kuwait	2.8	2.6	2.8	2.7	2.6	2.7	-0.3	-0.3
Nigeria	1.0	1.4	1.8	1.7	1.7	1.4	0.4	-0.1
Saudi Arabia	11.0	9.0	11.0	10.5	10.0	10.5	-2.0	-1.1
UAE	3.5	3.3	3.2	3.0	2.9	3.2	-0.2	-0.3
<b>Total OPEC-10</b>	<b>25.5</b>	<b>23.2</b>	<b>26.8</b>	<b>25.4</b>	<b>24.4</b>	<b>25.0</b>	<b>-2.3</b>	<b>-2.4</b>
Iran <sup>3</sup>	2.5	3.1					0.6	0.0
Libya <sup>3</sup>	1.2	1.1					0.0	0.0
Venezuela <sup>3</sup>	0.7	0.8					0.1	0.0
<b>Total OPEC</b>	<b>29.9</b>	<b>28.2</b>					<b>-1.7</b>	<b>-2.4</b>
Azerbaijan	0.5	0.5	0.7	0.7	0.7	0.6	-0.1	0.0
Kazakhstan	1.2	1.6	1.7	1.6	1.6	1.6	0.4	-0.2
Mexico <sup>4</sup>	1.6	1.7	1.8	1.8	1.8	1.8	0.0	0.0
Oman	0.9	0.8	0.9	0.8	0.8	0.8	-0.1	-0.1
Russia	9.7	9.5	11.0	10.5	10.0	9.9	-0.2	-1.1
Others <sup>5</sup>	0.9	0.9	1.1	1.1	1.1	0.7	0.0	0.0
<b>Total Non-OPEC</b>	<b>14.9</b>	<b>15.0</b>	<b>17.2</b>	<b>16.4</b>	<b>15.8</b>	<b>15.5</b>	<b>0.1</b>	<b>-1.4</b>
<b>OPEC+<sup>19</sup> in cut deal<sup>3</sup></b>	<b>40.4</b>	<b>38.2</b>	<b>44.0</b>	<b>42</b>	<b>40.2</b>	<b>40.5</b>	<b>-2.2</b>	<b>-3.8</b>
<b>Total OPEC+</b>	<b>44.8</b>	<b>43.2</b>					<b>-1.6</b>	

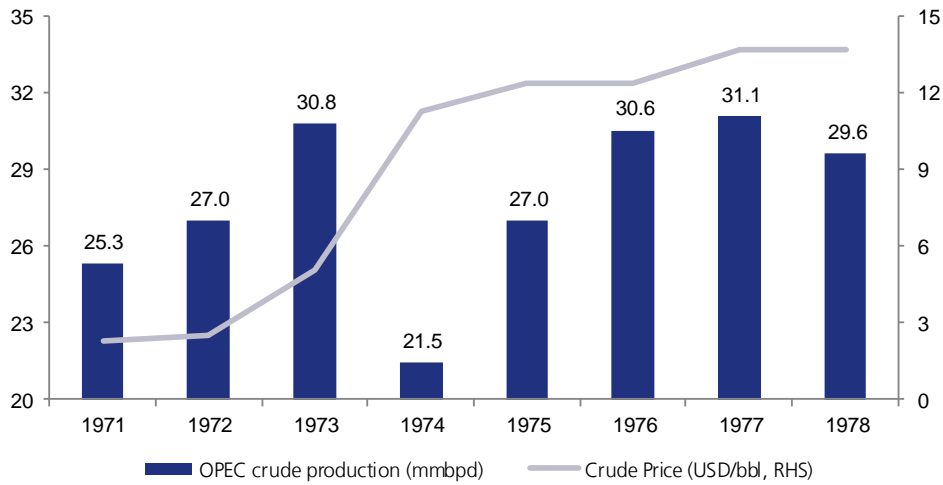
Source: IEA, Note: Production excludes condensates; 1. Capacity levels can be reached within 90 days and sustained for extended period; 2. Excludes shut in Iranian, Russian crude; 3. Iran, Libya, Venezuela exempt from cuts; 4. Mexico excluded from OPEC+ compliance; only cut in May, June 2020; 5. Bahrain, Brunei, Malaysia, Sudan and South Sudan.

## Exhibit 7. Saudi Arabia's fiscal breakeven crude price is ~USD 80/bbl

USD/bbl	Avg 2000-19	2020	2021	2022	2023E	2024E
Algeria	102	90	111	86	112	112
Azerbaijan	52	66	58	64	77	78
Bahrain	83	114	135	134	126	129
Iran	86	547	259	278	352	375
Iraq	76	57	53	66	76	76
Kazakhstan	...	192	184	96	100	84
Kuwait	47	76	62	63	71	66
Libya	72	142	52	85	64	62
Oman	69	86	77	62	72	66
Qatar	45	49	47	45	45	42
<b>Saudi Arabia</b>	<b>80</b>	<b>76</b>	<b>84</b>	<b>86</b>	<b>81</b>	<b>75</b>
Turkmenistan	...	41	32	37	38	40
United Arab Emirates	50	52	53	55	56	55

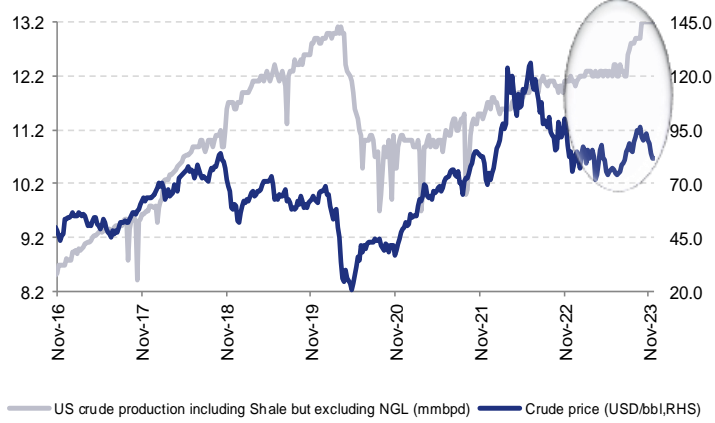
Source: IMF, JM Financial

**Exhibit 8. Crude price rose ~300% during 1973-74 Arab oil embargo**



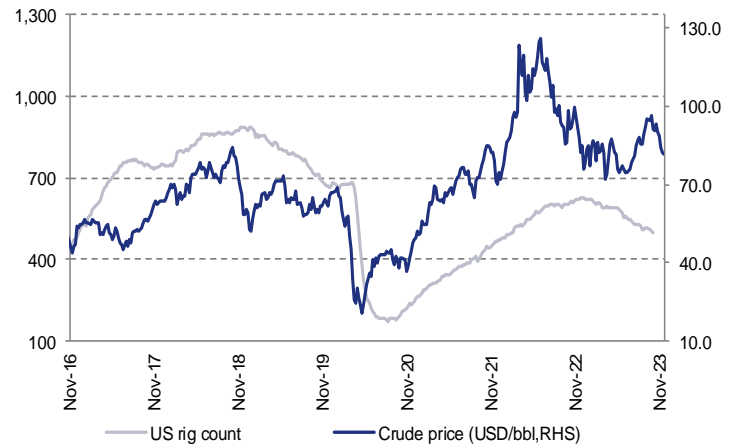
Source: Bloomberg

**Exhibit 9. US crude output steady at ~13.2mmbpd, above pre-Covid peak of ~13mmbpd**



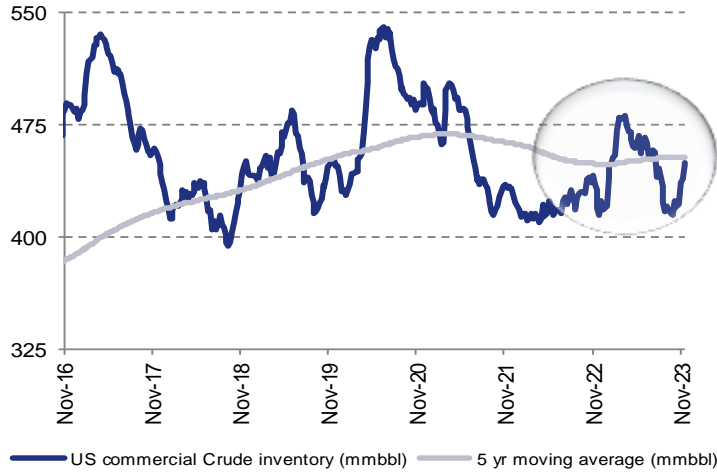
Source: Bloomberg, EIA JM Financial

**Exhibit 10. US oil rig count at 500, still down vs.784 rigs in Jun'19**



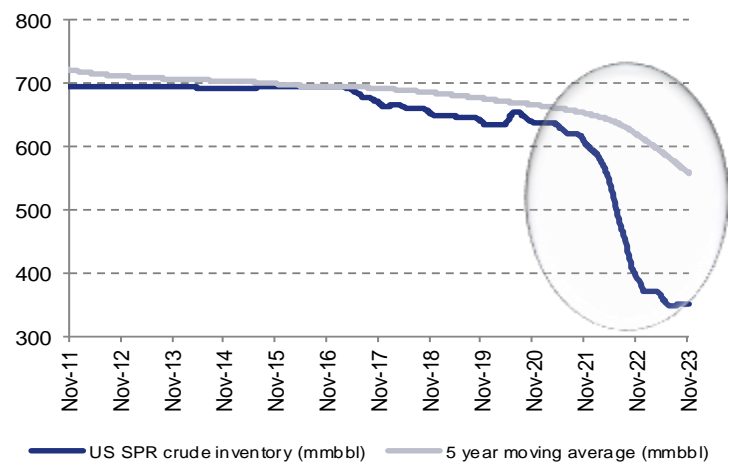
Source: Bloomberg, JM Financial

Exhibit 11. US commercial crude inventory at ~450mmbbl, slightly below its 5-year average



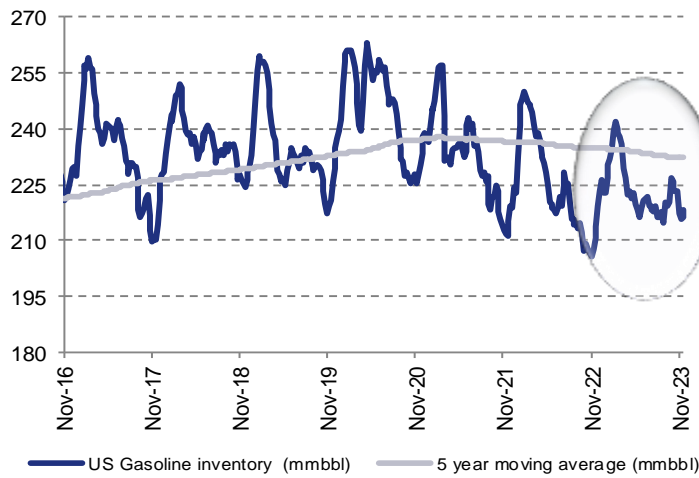
Source: Bloomberg, EIA JM Financial

Exhibit 12. US strategic crude inventory at ~350mmbbl vs. 5-year average of ~560mmbbl



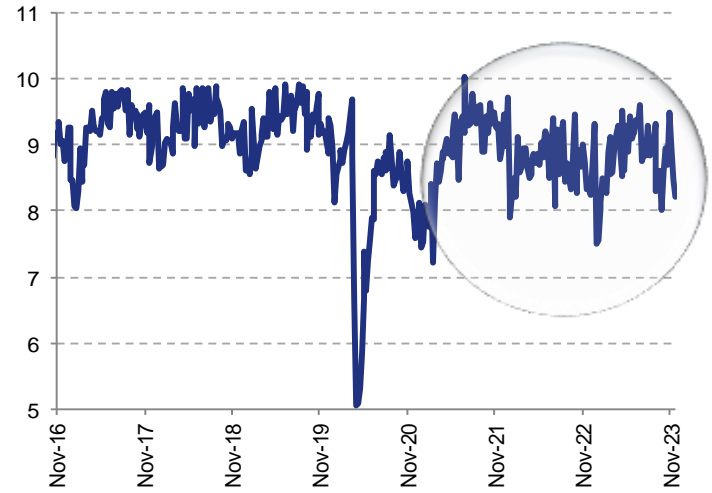
Source: Bloomberg, JM Financial

Exhibit 13. US gasoline inventory is below 5-year average (mmbbl)



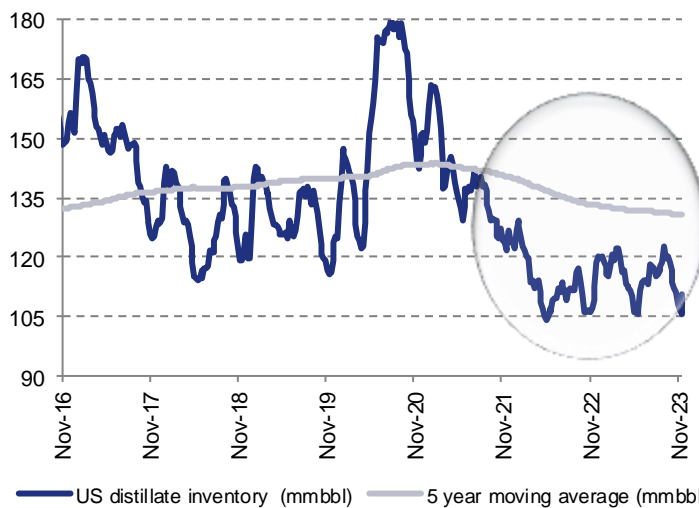
Source: EIA, JM Financial

Exhibit 14. US gasoline demand was ~8.8mmbpd in Nov'23



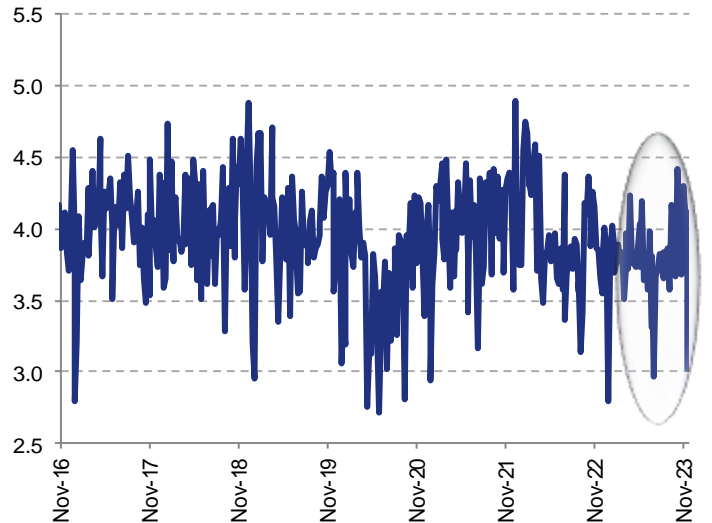
Source: EIA, JM Financial

Exhibit 15. US distillate inventory is below 5-year average (mmbbl)



Source: EIA, JM Financial

Exhibit 16. US distillate demand was ~3.9mmbpd in Nov'23



Source: EIA, JM Financial

Exhibit 17. US monthly crude and natural gas (including NGL) production trend – significant rise in NGL production; crude output has also grown in last 4-5 months

	NGL		Crude Oil		Dry Natural Gas		Dry Natural Gas		NGL production as % of Dry Natural Gas production
	Production (mmbpd)	YoY growth (%)	Production (mmbpd)	YoY growth (%)	Production (bcf/d)	Production (mmbopd)	YoY growth (%)		
CY10	2.07		5.47		58.39	9.92		20.9%	
CY11	2.21	6.8%	5.64	3.1%	62.72	10.66	7.4%	20.8%	
CY12	2.41	8.8%	6.50	15.1%	65.66	11.16	4.7%	21.6%	
CY13	2.61	8.2%	7.45	14.7%	66.66	11.33	1.5%	23.0%	
CY14	3.01	15.6%	8.67	16.4%	70.09	11.91	5.1%	25.3%	
CY15	3.34	10.9%	9.43	8.8%	74.15	12.60	5.8%	26.5%	
CY16	3.51	5.0%	8.83	-6.4%	72.66	12.35	-2.0%	28.4%	
CY17	3.78	7.8%	9.35	5.9%	74.75	12.70	2.9%	29.8%	
CY18	4.37	15.5%	10.93	16.9%	83.29	14.15	11.4%	30.9%	
CY19	4.82	10.5%	12.31	12.6%	92.86	15.78	11.5%	30.6%	
CY20	5.17	7.2%	11.32	-8.0%	92.40	15.70	-0.5%	33.0%	
CY21	5.42	4.7%	11.26	-0.6%	94.54	16.06	2.3%	33.7%	
CY22	5.93	9.5%	11.91	5.8%	99.58	16.92	5.3%	35.1%	
CY23E	6.36	7.2%	12.90	8.4%	103.66	17.62	4.1%	36.1%	
CY24E	6.52	2.5%	13.15	1.9%	105.12	17.86	1.4%	36.5%	
Jan-23	5.85	6.2%	12.57	9.5%	101.94	17.32	5.9%	33.8%	
Feb-23	5.96	8.1%	12.53	11.3%	102.00	17.33	6.3%	34.4%	
Mar-23	6.21	4.4%	12.77	8.2%	102.87	17.48	5.4%	35.5%	
Apr-23	6.37	7.7%	12.65	7.5%	102.65	17.44	4.4%	36.5%	
May-23	6.38	7.0%	12.69	8.2%	103.58	17.60	4.5%	36.2%	
Jun-23	6.53	8.6%	12.89	9.3%	103.33	17.56	4.0%	37.2%	
Jul-23	6.45	4.2%	12.96	9.5%	103.40	17.57	3.0%	36.7%	
Aug-23	6.55	8.0%	13.05	8.9%	104.38	17.74	3.5%	36.9%	
Sep-23	6.53	6.2%	13.20	7.1%	104.66	17.78	2.3%	36.7%	
Oct-23	6.55	6.2%	13.20	6.6%	104.79	17.81	2.5%	36.8%	

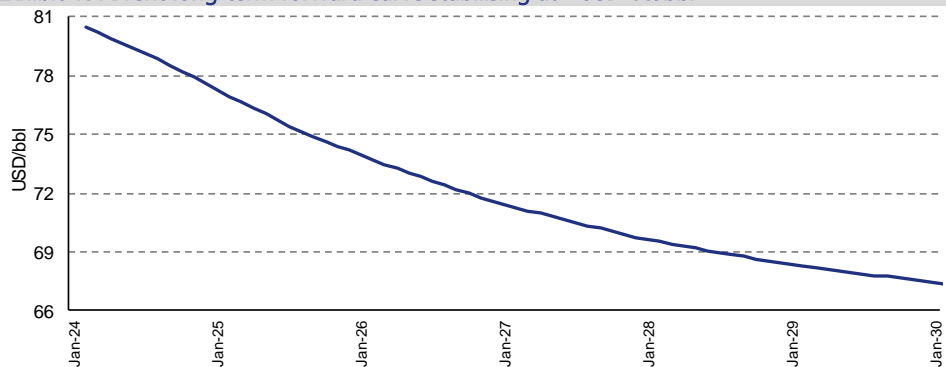
Source: EIA, JM Financial

Exhibit 18. China's refinery throughput and oil & gas exports and imports: Refining throughput & crude imports remain robust; so does oil product exports

	CY19	CY20	CY21	CY22	CY23TD	CY22TD	% YoY	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	% YoY
<b>Refinery Throughput</b>																							
Total Throughput (mmt)	N/A	N/A	N/A	673.9	618.8	554.4	11.6%	53.7	56.8	58.6	59.6	59.9	58.0	58.0	63.3	61.1	62.0	61.0	63.1	64.7	63.6	63.9	9.1%
Total Throughput (mmbpd)	N/A	N/A	N/A	13.5	148.6	133.3	11.5%	12.6	13.8	13.8	14.5	14.1	13.7	15.1	14.9	14.9	14.6	14.8	14.9	15.2	15.5	15.1	9.1%
<b>Exports</b>																							
Diesel (mmt)	21.4	19.8	17.2	10.9	10.8	5.0	117%	0.8	1.7	1.1	2.1	2.8	2.4	2.2	1.4	0.6	0.6	0.3	0.9	1.3	1.2		
Jet Fuel (mmt)	17.6	10.0	8.6	10.9	11.2	6.8	65.4%	0.8	1.2	1.2	1.3	1.7	1.4	1.3	1.1	0.8	0.9	1.1	1.5	1.5	1.4		
Gasoline (mmt)	16.4	16.0	14.6	12.7	9.9	8.3	19.4%	1.1	0.7	1.0	1.5	1.9	1.2	1.0	0.8	0.8	1.4	1.0	1.2	1.4	1.1		
Total oil product exports (mmt)	66.9	61.9	60.3	53.8	53.1	39.9	33.0%	4.8	5.6	4.5	6.1	7.7	6.5	6.2	5.5	3.8	4.9	4.5	5.3	5.9	5.4	5.2	15.9%
<b>Imports</b>																							
Crude (mmt)	505.9	542.4	513.2	508.4	473.5	413.6	14.5%	40.4	40.2	43.1	46.7	48.1	43.3	40.7	52.3	42.4	51.4	52.1	43.7	52.8	45.7	49.0	13.5%
Crude (mmbpd)	10.1	10.8	10.3	10.2	11.4	9.93	14.5%	9.5	9.8	10.2	11.4	11.3	10.2	10.6	12.3	10.3	12.1	12.7	10.3	12.4	11.1	11.5	13.5%
Total oil product imports (mmt)	30.6	28.5	27.1	26.3	38.9	19.9	95%	1.9	2.3	2.5	3.1	3.3	2.4	2.9	3.9	4.4	4.6	4.4	4.5	3.5	4.2	4.1	63.4%
LNG (mmt)	60.7	67.3	79.9	63.8	51.5	46.8	10.1%	4.7	5.9	4.0	6.4	6.6	5.9	5.2	5.4	4.8	6.4	6.0	5.9	6.3	5.7		
Piped natural gas (mmt)	36.3	34.5	42.4	45.8	36.7	34.7	5.7%	4.1	4.3	3.6	3.9	3.7	3.4	3.5	3.5	4.2	4.2	4.4	4.5	4.6	4.5		

Source: Bloomberg, JM Financial

Exhibit 19. Brent long-term forward curve stabilising at ~USD 65/bbl



Source: Bloomberg, JM Financial



## Exhibit 20. Russia's share in India's crude imports declined MoM to ~35%; discount on Russian crude at ~USD 3/bbl in Sep'23

Year/Month	India's total crude imports			India's crude imports from Russia			Russia crude proportion and discount		
	Value (USD bn)	Qty (mmbpd)	Average Cost (USD/bbl)	Value (USD bn)	Qty (mmbpd)	Average Cost (USD/bbl)	Russia's share in India's crude imports	Russia crude premium/ (discount) (%)	Russia crude premium/ (discount) (\$/bbl)
<b>Annual</b>									
FY14	143.7	3.81	103.4	0.1	0.00	94.9	0.1%	NM	NM
FY15	116.0	3.78	84.0	0.2	0.00	113.2	0.1%	NM	NM
FY16	65.6	4.06	44.1	0.1	0.00	65.8	0.1%	NM	NM
FY17	70.7	4.33	44.8	0.3	0.01	78.5	0.2%	NM	NM
FY18	87.4	4.39	54.5	1.2	0.06	53.7	1.4%	-2%	-0.8
FY19	114.2	4.56	68.6	1.2	0.04	72.6	1.0%	6%	4.0
FY20	102.7	4.44	63.3	1.7	0.07	66.6	1.6%	5%	3.3
FY21	59.3	3.79	42.8	0.9	0.06	46.5	1.5%	9%	3.7
FY22	122.6	4.43	75.8	2.5	0.09	77.9	2.0%	3%	2.0
<b>FY23</b>	<b>162.1</b>	<b>4.77</b>	<b>93.2</b>	<b>31.3</b>	<b>1.02</b>	<b>83.6</b>	<b>21.5%</b>	<b>-10%</b>	<b>-9.5</b>
<b>Monthly details</b>									
Aug-21	6.8	3.00	72.6	0.1	0.06	76.3	2.1%	5%	3.7
Sep-21	13.6	6.50	69.8	0.4	0.20	75.0	3.1%	8%	5.3
Oct-21	8.9	3.83	75.0	0.2	0.10	70.8	2.6%	-6%	-4.2
Nov-21	10.6	4.48	79.2	0.2	0.07	80.6	1.5%	2%	1.4
Dec-21	12.2	5.11	77.3	0.2	0.10	78.2	1.9%	1%	0.8
Jan-22	8.4	3.40	79.8	0.2	0.06	93.1	1.8%	17%	13.4
Feb-22	12.2	5.16	84.6	NA	NA	NA	NA	NA	NA
Mar-22	16.2	5.39	97.3	0.3	0.09	117.7	1.7%	21%	20.4
Apr-22	14.2	4.47	105.8	0.9	0.27	105.3	6.1%	0%	-0.5
May-22	12.8	3.89	106.1	1.3	0.47	92.9	12.0%	-12%	-13.2
Jun-22	15.4	4.89	105.1	2.4	0.79	100.2	16.1%	-5%	-4.9
Jul-22	14.0	4.09	110.6	2.4	0.77	99.3	18.8%	-10%	-11.3
Aug-22	13.1	4.05	104.7	1.9	0.67	93.8	16.5%	-10%	-10.9
Sep-22	14.0	4.67	100.1	3.1	1.16	90.2	24.7%	-10%	-9.9
Oct-22	12.3	4.28	92.8	2.6	1.00	84.5	23.4%	-9%	-8.3
Nov-22	12.1	4.20	95.8	2.7	1.00	90.3	23.9%	-6%	-5.5
Dec-22	15.2	6.09	80.7	3.1	1.28	78.9	21.0%	-2%	-1.8
Jan-23	12.0	4.85	80.0	3.2	1.40	73.1	28.9%	-9%	-6.9
Feb-23	13.3	6.08	78.3	3.4	1.66	71.9	27.4%	-8%	-6.4
Mar-23	13.6	5.73	76.7	4.0	1.85	70.0	32.3%	-9%	-6.8
Apr-23	10.9	4.73	76.5	3.4	1.69	67.9	35.7%	-11%	-8.6
May-23	12.1	4.60	85.0	4.6	1.82	81.5	39.5%	-4%	-3.5
Jun-23	10.0	4.93	67.7	3.8	2.17	58.5	44.0%	-14%	-9.2
Jul-23	9.0	3.90	74.1	3.4	1.55	70.2	39.7%	-5%	-3.9
Aug-23	11.5	4.63	80.0	4.2	1.81	74.0	39.1%	-8%	-6.0
Sep-23	10.4	4.09	84.9	3.5	1.42	81.5	34.8%	-4%	-3.4

Source: CMIE, JM Financial.

## Exhibit 21. ONGC valuation sensitivity to net crude realisation and gas price (INR/share)

		FY25 Gas Price (USD/mmbtu)						
		4.6	5.2	5.9	6.5	7.2	7.8	8.5
Net crude realisation (USD/bbl)	50	136	146	157	167	178	188	199
	55	155	166	176	187	197	208	218
	60	174	185	195	206	216	227	237
	65	194	204	215	225	236	246	256
	70	213	223	234	244	255	265	276
	75	232	243	253	263	274	284	295
	80	232	243	253	264	274	285	295

Source: Company, JM Financial.

## Exhibit 22. Oil India valuation sensitivity to net crude realisation and gas price

		FY25 Gas Price (USD/mmbtu)						
		4.5	5.2	5.8	6.5	7.1	7.8	8.4
Net crude realisation (USD/bbl)	50	253	264	276	287	299	310	322
	55	275	287	298	310	322	333	345
	60	298	310	321	333	344	356	367
	65	321	332	344	355	367	379	390
	70	343	355	366	378	390	401	413
	75	357	368	380	391	403	415	426
	80	356	367	379	391	402	414	425

Source: Company, JM Financial.

**Exhibit 23. OMCs' auto-fuel gross marketing margin improved to INR 6.4/ltr (vs. historical margin of +INR 3.5/ltr) and gross auto-fuel integrated margin to INR 15.2/ltr (vs. historical margin of INR 11.4/ltr)**

	1QFY22	2QFY22	3QFY22	4QFY22	1QFY23	2QFY23	3QFY23	4QFY23	1QFY24	2QFY24	3QFY24TD	On spot crude price and spot product crack**
<b>OMCs gross marketing margin (GMM, INR/ltr)</b>												
Diesel GMM (INR/ltr)	4.0	5.9	5.8	-1.3	-12.8	-7.5	-6.5	0.6	9.5	2.8	0.2	5.6
Petrol GMM (INR/ltr)	0.2	2.4	2.2	-2.0	-11.0	-3.7	7.2	5.0	7.4	4.3	4.9	8.1
<b>Wt Avg GMM for Diesel &amp; Petrol (INR/ltr)</b>	<b>2.7</b>	<b>4.8</b>	<b>4.6</b>	<b>-1.5</b>	<b>-12.2</b>	<b>-6.2</b>	<b>-2.0</b>	<b>2.1</b>	<b>8.8</b>	<b>3.3</b>	<b>1.8</b>	<b>6.4</b>
Historical average GMM (INR/ltr)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
<b>OMCs diesel/petrol refining product crack trend (USD/bbl)</b>												
Diesel refining product crack (USD/bbl)	5.3	5.4	11.6	19.5	43.0	35.1	39.6	25.2	13.8	26.5	21.0	19.2
Petrol refining product crack (USD/bbl)	9.9	11.8	15.8	17.3	34.9	13.4	9.6	18.5	16.5	18.8	10.7	11.7
Historical average diesel/petrol product crack (USD/bbl)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
<b>OMCs diesel/petrol refining product crack trend (INR/ltr)</b>												
Diesel refining product crack (INR/ltr)	2.5	2.5	5.5	9.2	20.9	17.6	20.5	13.0	7.1	13.8	11.0	10.1
Petrol refining product crack (INR/ltr)	4.6	5.5	7.4	8.2	17.0	6.7	5.0	9.6	8.5	9.8	5.6	6.1
Historical average diesel/petrol product crack (INR/ltr)	7.0	7.0	7.1	7.1	7.3	7.5	7.8	7.8	7.8	7.8	7.8	7.9
<b>OMCs integrated gross refining and marketing margin (INR/ltr) — assuming 1:1 marketing vs refining volume</b>												
Diesel integrated gross margin (INR/ltr)	6.4	8.4	11.2	7.9	8.1	10.2	14.0	13.6	16.6	16.6	11.2	15.6
Petrol integrated gross margin (INR/ltr)	4.8	7.9	9.6	6.2	6.0	3.1	12.1	14.6	16.0	14.1	10.5	14.2
<b>Wt Avg integrated gross margin for Diesel &amp; Petrol (INR/ltr)*</b>	<b>5.9</b>	<b>8.3</b>	<b>10.7</b>	<b>7.4</b>	<b>7.4</b>	<b>7.9</b>	<b>13.4</b>	<b>14.0</b>	<b>16.4</b>	<b>15.8</b>	<b>11.0</b>	<b>15.2</b>
Historical average integrated gross margin for Diesel & Petrol (INR/ltr)	10.5	10.5	10.6	10.6	10.8	11.0	11.3	11.3	11.3	11.3	11.3	11.4
<b>HPCL integrated gross refining and marketing margin (INR/ltr) — assuming 1.7:1 marketing vs refining volume</b>												
Diesel integrated gross margin (INR/ltr)	5.4	7.4	9.0	4.1	-0.5	2.9	5.6	8.3	13.7	10.9	6.7	11.5
Petrol integrated gross margin (INR/ltr)	2.9	5.7	6.5	2.9	-1.0	0.3	10.1	10.7	12.5	10.1	8.2	11.7
<b>Wt Avg integrated gross margin for Diesel &amp; Petrol (INR/ltr)*</b>	<b>4.6</b>	<b>6.8</b>	<b>8.2</b>	<b>3.7</b>	<b>-0.7</b>	<b>2.0</b>	<b>7.1</b>	<b>9.1</b>	<b>13.3</b>	<b>10.7</b>	<b>7.2</b>	<b>11.6</b>
HPCL historical average integrated gross margin for Diesel & Petrol (INR/ltr)	7.6	7.6	7.7	7.7	7.8	7.9	8.1	8.1	8.1	8.1	8.1	8.1
<b>BPCL integrated gross refining and marketing margin (INR/ltr) — assuming 1.3:1 marketing vs refining volume</b>												
Diesel integrated gross margin (INR/ltr)	5.9	7.8	10.0	5.8	3.3	6.1	9.3	10.6	15.0	13.4	8.7	13.3
Petrol integrated gross margin (INR/ltr)	3.7	6.7	7.9	4.3	2.0	1.5	11.0	12.4	14.0	11.9	9.2	12.8
<b>Wt Avg integrated gross margin for Diesel &amp; Petrol (INR/ltr)*</b>	<b>5.1</b>	<b>7.4</b>	<b>9.3</b>	<b>5.3</b>	<b>2.9</b>	<b>4.6</b>	<b>9.8</b>	<b>11.2</b>	<b>14.7</b>	<b>12.9</b>	<b>8.9</b>	<b>13.1</b>
BPCL historical average integrated gross margin for Diesel & Petrol (INR/ltr)	8.9	8.9	8.9	9.0	9.1	9.3	9.5	9.5	9.5	9.5	9.5	9.5
<b>IOCL integrated gross refining and marketing margin (INR/ltr) — assuming 1.2:1 marketing vs refining volume</b>												
Diesel integrated gross margin (INR/ltr)	6.0	8.0	10.3	6.4	4.6	7.2	10.6	11.5	15.4	14.3	9.4	14.0
Petrol integrated gross margin (INR/ltr)	4.0	7.0	8.4	4.9	3.1	1.9	11.3	13.0	14.5	12.5	9.6	13.2
<b>Wt Avg integrated gross margin for Diesel &amp; Petrol (INR/ltr)*</b>	<b>5.4</b>	<b>7.7</b>	<b>9.7</b>	<b>5.9</b>	<b>4.1</b>	<b>5.5</b>	<b>10.8</b>	<b>12.0</b>	<b>15.1</b>	<b>13.7</b>	<b>9.5</b>	<b>13.7</b>
IOCL historical average integrated gross margin for Diesel & Petrol (INR/ltr)	9.3	9.3	9.4	9.4	9.6	9.8	10.0	10.0	10.0	10.0	10.0	10.0

Source: Company, JM Financial Note: \*Margin is based on spot Brent price of ~USD80.5/bbl and current diesel crack of ~USD19/bbl and petrol crack of ~USD13/bbl

**Exhibit 24. Spore GRM has moderated to ~USD4.5/bbl in 3QFY24TD with moderation in product cracks**

	WE 1 Dec	WE 24 Nov	Nov-23	Oct-23	Sep-23	3QFY24TD	2QFY24	1QFY24	4QFY23	3QFY23	2HFY23	FY23
<b>S'pore GRM (USD/bbl)</b>	<b>4.5</b>	<b>5.8</b>	<b>5.2</b>	<b>3.9</b>	<b>9.4</b>	<b>4.5</b>	<b>9.6</b>	<b>4.0</b>	<b>8.1</b>	<b>6.3</b>	<b>7.2</b>	<b>10.8</b>
<b>Product cracks (USD/bbl)</b>												
Diesel	19.4	19.6	19.5	22.3	28.7	21.0	26.5	13.9	25.2	39.6	32.4	35.7
Petrol	11.6	13.5	13.4	8.1	17.1	10.7	18.8	16.5	18.5	9.6	14.1	19.1
Naptha	-11.4	-12.9	-13.9	-18.5	-16.9	-16.3	-16.4	-12.8	-4.8	-11.5	-8.2	-12.1
LPG	-23.3	-23.6	-22.9	-32.3	-31.8	-27.9	-32.1	-32.7	-27.4	-32.8	-30.1	-36.3
Jet Fuel	19.4	19.6	19.5	22.3	28.7	21.0	26.5	13.9	25.0	33.9	29.4	32.9
Fuel Oil	-10.0	-10.1	-11.8	-15.0	-9.8	-13.5	-5.9	-9.2	-18.2	-24.4	-21.3	-18.4
<b>Crude spreads (USD/bbl)</b>												
Arab heavy-Dubai spread	1.3	1.7	1.6	1.2	1.5	1.4	1.1	0.7	-1.3	2.2	0.5	2.6
Arab Light-Arab Heavy spread	2.3	2.3	2.3	1.9	1.9	2.1	2.1	1.8	4.1	3.8	3.9	3.1
Brent-Dubai crude spread	-0.4	-1.4	-0.1	0.4	1.0	0.2	0.0	0.4	1.8	3.7	2.7	2.4
<b>Brent (USD/bbl)</b>	<b>81.5</b>	<b>81.4</b>	<b>83.3</b>	<b>91.1</b>	<b>94.0</b>	<b>87.3</b>	<b>86.7</b>	<b>78.0</b>	<b>83.0</b>	<b>88.3</b>	<b>85.7</b>	<b>94.7</b>

Source: Bloomberg

**Exhibit 25. India's current petrol price is lower by ~INR 4-13/ltr vs. previous peak on 3<sup>rd</sup> Nov'21 while diesel price is ~ INR 8-12/ltr lower vs. peak on 3<sup>rd</sup> Nov'21**

	Petrol price (INR/ltr)			Diesel price (INR/ltr)		
	Today's price	3rd Nov'21 (before excise duty cut)	Today's price lower vs 3rd Nov'21 price	Today's price	3rd Nov'21 (before excise duty cut)	Today's price lower vs 3rd Nov'21 price
Delhi	96.72	110.04	-13.3	89.62	98.42	-8.8
Mumbai	106.31	115.85	-9.5	94.27	106.62	-12.4
Kolkata	106.03	110.49	-4.5	92.76	101.56	-8.8
Chennai	102.63	106.66	-4.0	94.46	102.59	-8.1

Source: JM Financial



Exhibit 26. Historical changes in excise duty on diesel/petrol (INR/ltr)

Date	Diesel		Petrol	
	Excise duty	Hike/(cut) in duty	Excise duty	Hike/(cut) in duty
01-May-12	2.0		14.4	
01-Oct-12	3.5	1.5	9.1	-5.3
1-Mar-14	3.6	0.1	9.5	0.4
01-Oct-14	5.1	1.6	11.0	1.5
01-Nov-14	6.1	1.0	13.3	2.3
01-Dec-14	10.3	4.1	17.5	4.1
01-Dec-15	10.7	0.4	19.1	1.6
01-Apr-16	17.3	6.7	21.5	2.4
01-Sep-17	15.3	-2.0	19.5	-2.0
04-Oct-18	13.8	-1.5	18.0	-1.5
06-Jul-19	15.8	2.0	20.0	2.0
14-Mar-20	18.8	3.0	23.0	3.0
06-May-20	31.8	13.0	33.0	10.0
04-Nov-21	21.8	-10.0	28.0	-5.0
22-May-22	15.8	-6.0	20.0	-8.0

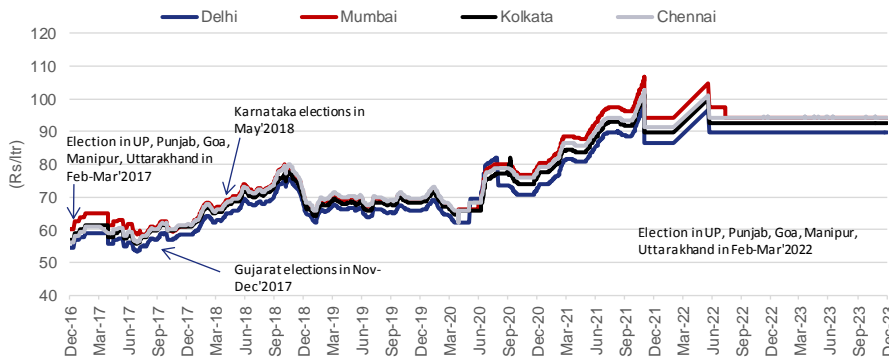
Source: Company, JM Financial

Exhibit 27. India's election schedule

State	Election Month
<b>General Election</b>	<b>May-24</b>
Andhra Pradesh	Jun-24
Arunachal Pradesh	Jun-24
Odisha	Jun-24
Sikkim	Jun-24
Haryana	Nov-24
Maharashtra	Nov-24

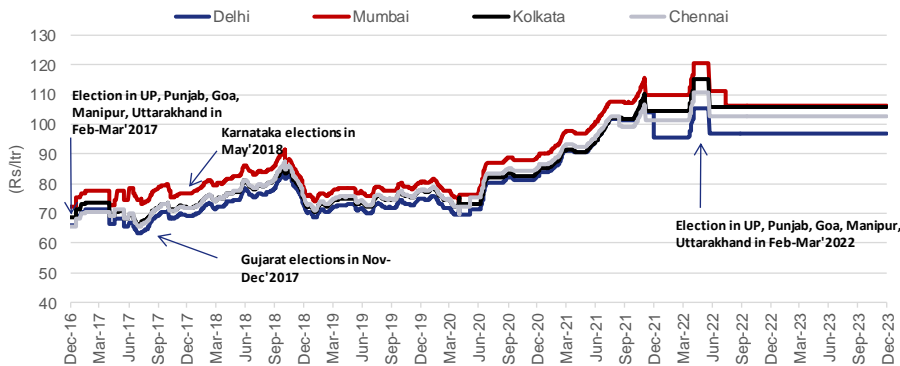
Source: Election commission of India

Exhibit 28. Diesel price history: Pause on price hikes amidst key elections but OMCs usually get back pricing freedom post elections



Source: JM Financial

Exhibit 29. Petrol price history: Pause on price hikes due to key elections but OMCs usually regain pricing freedom post elections



Source: JM Financial

## APPENDIX I

## JM Financial Institutional Securities Limited

Corporate Identity Number: U67100MH2017PLC296081

Member of BSE Ltd. and National Stock Exchange of India Ltd.

SEBI Registration Nos.: Stock Broker - INZ000163434, Research Analyst - INH000000610

Registered Office: 7th Floor, Cnergy, Appasaheb Marathe Marg, Prabhadevi, Mumbai 400 025, India.

Board: +91 22 6630 3030 | Fax: +91 22 6630 3488 | Email: jmfinancial.research@jmfl.com | www.jmfl.com

Compliance Officer: Mr. Sahil Salastekar | Tel: +91 22 6224 1073 | Email: sahil.salastekar@jmfl.com

Grievance officer: Mr. Sahil Salastekar | Tel: +91 22 6224 1073 | Email: instcompliance@jmfl.com

Investment in securities market are subject to market risks. Read all the related documents carefully before investing.

Definition of ratings	
Rating	Meaning
Buy	Total expected returns of more than 10% for stocks with market capitalisation in excess of INR 200 billion and REITs* and more than 15% for all other stocks, over the next twelve months. Total expected return includes dividend yields.
Hold	Price expected to move in the range of 10% downside to 10% upside from the current market price for stocks with market capitalisation in excess of INR 200 billion and REITs* and in the range of 10% downside to 15% upside from the current market price for all other stocks, over the next twelve months.
Sell	Price expected to move downwards by more than 10% from the current market price over the next twelve months.

\* REITs refers to Real Estate Investment Trusts.

**Research Analyst(s) Certification**

The Research Analyst(s), with respect to each issuer and its securities covered by them in this research report, certify that:

All of the views expressed in this research report accurately reflect his or her or their personal views about all of the issuers and their securities; and

No part of his or her or their compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed in this research report.

**Important Disclosures**

This research report has been prepared by JM Financial Institutional Securities Limited (JM Financial Institutional Securities) to provide information about the company(ies) and sector(s), if any, covered in the report and may be distributed by it and/or its associates solely for the purpose of information of the select recipient of this report. This report and/or any part thereof, may not be duplicated in any form and/or reproduced or redistributed without the prior written consent of JM Financial Institutional Securities. This report has been prepared independent of the companies covered herein.

JM Financial Institutional Securities is registered with the Securities and Exchange Board of India (SEBI) as a Research Analyst and a Stock Broker having trading memberships of the BSE Ltd. (BSE) and National Stock Exchange of India Ltd. (NSE). No material disciplinary action has been taken by SEBI against JM Financial Institutional Securities in the past two financial years which may impact the investment decision making of the investor. Registration granted by SEBI and certification from the National Institute of Securities Market (NISM) in no way guarantee performance of JM Financial Institutional Securities or provide any assurance of returns to investors.

JM Financial Institutional Securities renders stock broking services primarily to institutional investors and provides the research services to its institutional clients/investors. JM Financial Institutional Securities and its associates are part of a multi-service, integrated investment banking, investment management, brokerage and financing group. JM Financial Institutional Securities and/or its associates might have provided or may provide services in respect of managing offerings of securities, corporate finance, investment banking, mergers & acquisitions, broking, financing or any other advisory services to the company(ies) covered herein. JM Financial Institutional Securities and/or its associates might have received during the past twelve months or may receive compensation from the company(ies) mentioned in this report for rendering any of the above services.

JM Financial Institutional Securities and/or its associates, their directors and employees may; (a) from time to time, have a long or short position in, and buy or sell the securities of the company(ies) mentioned herein or (b) be engaged in any other transaction involving such securities and earn brokerage or other compensation or act as a market maker in the financial instruments of the company(ies) covered under this report or (c) act as an advisor or lender/borrower to, or may have any financial interest in, such company(ies) or (d) considering the nature of business/activities that JM Financial Institutional Securities is engaged in, it may have potential conflict of interest at the time of publication of this report on the subject company(ies).

Neither JM Financial Institutional Securities nor its associates or the Research Analyst(s) named in this report or his/her relatives individually own one per cent or more securities of the company(ies) covered under this report, at the relevant date as specified in the SEBI (Research Analysts) Regulations, 2014.

The Research Analyst(s) principally responsible for the preparation of this research report and their immediate relatives are prohibited from buying or selling debt or equity securities, including but not limited to any option, right, warrant, future, long or short position issued by company(ies) covered under this report. The Research Analyst(s) principally responsible for the preparation of this research report or their immediate relatives (as defined under SEBI (Research Analysts) Regulations, 2014); (a) do not have any financial interest in the company(ies) covered under this report or (b) did not receive any compensation from the company(ies) covered under this report, or from any third party, in connection with this report or (c) do not have any other material conflict of interest at the time of publication of this report. Research Analyst(s) are not serving as an officer, director or employee of the company(ies) covered under this report.

While reasonable care has been taken in the preparation of this report, it does not purport to be a complete description of the securities, markets or developments referred to herein, and JM Financial Institutional Securities does not warrant its accuracy or completeness. JM Financial Institutional Securities may not be in any way responsible for any loss or damage that may arise to any person from any inadvertent error in the information contained in this report. This report is provided for information only and is not an investment advice and must not alone be taken as the basis for an investment decision.

This research report is based on the fundamental research/analysis conducted by the Research Analyst(s) named herein. Accordingly, this report has been prepared by studying/focusing on the fundamentals of the company(ies) covered in this report and other macro-economic factors. JM Financial Institutional Securities may have also issued or may issue, research reports and/or recommendations based on the technical/quantitative analysis of the company(ies) covered in this report by studying and using charts of the stock's price movement, trading volume and/or other volatility parameters. As a result, the views/recommendations expressed in such technical research reports could be inconsistent or even contrary to the views contained in this report.

The investment discussed or views expressed or recommendations/opinions given herein may not be suitable for all investors. The user assumes the entire risk of any use made of this information. The information contained herein may be changed without notice and JM Financial Institutional Securities reserves the right to make modifications and alterations to this statement as they may deem fit from time to time.

This report is neither an offer nor solicitation of an offer to buy and/or sell any securities mentioned herein and/or not an official confirmation of any transaction.

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 JM Financial Institutional Securities and/or its affiliated company(ies) 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 a certain category of investors. Persons in whose possession this report may come, are required to inform themselves of and to observe such restrictions.

**Additional disclosure only for U.S. persons:** JM Financial Institutional Securities has entered into an agreement with JM Financial Securities, Inc. ("JM Financial Securities"), a U.S. registered broker-dealer and member of the Financial Industry Regulatory Authority ("FINRA") in order to conduct certain business in the United States in reliance on the exemption from U.S. broker-dealer registration provided by Rule 15a-6, promulgated under the U.S. Securities Exchange Act of 1934 (the "Exchange Act"), as amended, and as interpreted by the staff of the U.S. Securities and Exchange Commission ("SEC") (together "Rule 15a-6").

This research report is distributed in the United States by JM Financial Securities in compliance with Rule 15a-6, and as a "third party research report" for purposes of FINRA Rule 2241. In compliance with Rule 15a-6(a)(3) this research report is distributed only to "major U.S. institutional investors" as defined in Rule 15a-6 and is not intended for use by any person or entity that is not a major U.S. institutional investor. If you have received a copy of this research report and are not a major U.S. institutional investor, you are instructed not to read, rely on, or reproduce the contents hereof, and to destroy this research or return it to JM Financial Institutional Securities or to JM Financial Securities.

This research report is a product of JM Financial Institutional Securities, which is the employer of the research analyst(s) solely responsible for its content. The research analyst(s) preparing this research report is/are resident outside the United States and are not associated persons or employees of any U.S. registered broker-dealer. Therefore, the analyst(s) are not subject to supervision by a U.S. broker-dealer, or otherwise required to satisfy the regulatory licensing requirements of FINRA and may not be subject to the Rule 2241 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.

Any U.S. person who is recipient of this report that wishes further information regarding, or to effect any transaction in, any of the securities discussed in this report, must contact, and deal directly through a U.S. registered representative affiliated with a broker-dealer registered with the SEC and a member of FINRA. In the U.S., JM Financial Institutional Securities has an affiliate, JM Financial Securities, Inc. located at 1325 Avenue of the Americas, 28th Floor, Office No. 2821, New York, New York 10019. Telephone +1 (332) 900 4958 which is registered with the SEC and is a member of FINRA and SIPC.

**Additional disclosure only for U.K. persons:** Neither JM Financial Institutional Securities nor any of its affiliates is authorised in the United Kingdom (U.K.) by the Financial Conduct Authority. As a result, this report is for distribution only to persons who (i) have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (as amended, the "Financial Promotion Order"), (ii) are persons falling within Article 49(2)(a) to (d) ("high net worth companies, unincorporated associations etc.") of the Financial Promotion Order, (iii) are outside the United Kingdom, or (iv) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000) in connection with the matters to which this report relates may otherwise lawfully be communicated or caused to be communicated (all such persons together being referred to as "relevant persons"). This report is directed only at relevant persons and must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this report relates is available only to relevant persons and will be engaged in only with relevant persons.

**Additional disclosure only for Canadian persons:** This report is not, and under no circumstances is to be construed as, an advertisement or a public offering of the securities described herein in Canada or any province or territory thereof. Under no circumstances is this report to be construed as an offer to sell securities or as a solicitation of an offer to buy securities in any jurisdiction of Canada. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by a dealer properly registered under applicable securities laws or, alternatively, pursuant to an exemption from the registration requirement in the relevant province or territory of Canada in which such offer or sale is made. This report is not, and under no circumstances is it to be construed as, a prospectus or an offering memorandum. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed upon these materials, the information contained herein or the merits of the securities described herein and any representation to the contrary is an offence. If you are located in Canada, this report has been made available to you based on your representation that you are an "accredited investor" as such term is defined in National Instrument 45-106 Prospectus Exemptions and a "permitted client" as such term is defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Under no circumstances is the information contained herein to be construed as investment advice in any province or territory of Canada nor should it be construed as being tailored to the needs of the recipient. Canadian recipients are advised that JM Financial Securities, Inc., JM Financial Institutional Securities Limited, their affiliates and authorized agents are not responsible for, nor do they accept, any liability whatsoever for any direct or consequential loss arising from any use of this research report or the information contained herein.