

ICICI Securities Limited
is the author and
distributor of this report

Telecom

Spectrum auction 2021: Countdown begins with guidelines

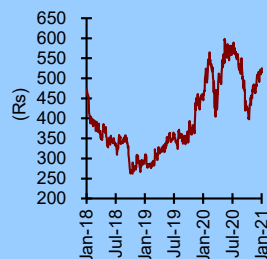
The Department of Telecommunications (DoT) has released its notice inviting applications for the spectrum auction scheduled to start on 1st Mar'21. Spectrum supplies across bands remain excessive (including spectrum coming up for renewal in CY21). Final auction prices are same as recommended by the regulator in CY18, and 800MHz reserve prices are 18.5% lower than the Oct'16 reserve prices, while 1800/2300MHz prices have been increased by 14.5% and 17.5% respectively. 700MHz band prices remain significantly high to find any bidders. We expect Bharti Airtel (Bharti) and Vodafone Idea (VIL) to renew their expiring spectrum only partially due to excess spectrum holding.

- ▶ **DoT releases notice inviting applications.** DoT has released a notice inviting applications (NIA) for the spectrum auctions (in 700, 800, 900, 1800, 2100, 2300 and 2500MHz bands), which are scheduled to begin from 1st Mar'21. The auction does not include the popular 5G spectrum band (3,300-3,600MHz), which was broadly known. The upcoming auction includes spectrum due for renewal in CY21 too. The auction guidelines are broadly in line with regulator's recommendation on spectrum reserve prices and block size. The key date to watch for is 5th Feb'21, the deadline for interested operators to submit their applications.
- ▶ **Interest rate fixed at 7.3% (vs 9.3% in 2016).** DoT continues to provide deferred payment option for successful bidders with upfront payment of 50% of final bid amount in 1800, 2100, 2300 and 2500MHz bands, and 25% in 700, 800 and 900MHz. Thereafter, operators would get moratorium for two years. They have to pay balance amount in 16 equal annual installments at an interest rate of 7.3% (vs 9.3% in the previous auction).
- ▶ **Other highlights.** 1) Auctions would be held simultaneously across the aforementioned bands; 2) validity of spectrum awarded would be for 20 years; 3) spectrum holding caps remain unchanged at 50% for sub-GHz (700, 800 and 900MHz), and 35% of total spectrum available in each circle; and 4) DoT may carry frequency reconfiguration or rearrangement of spot frequencies resulting in contiguity of spectrum and improve spectrum efficiency.
- ▶ **800MHz spectrum price cut; 1800/2300MHz prices increase vs Oct'16 reserve prices.** Final reserve price for 800MHz spectrum in the upcoming auction is 18.5% lower than the Oct'16 price, which should benefit the relevant operators. In comparison, 1800MHz final reserve price for the upcoming auction is 14.5% higher than the Oct'16 reserve price, and 2300MHz price is 17.5% higher. Though 700MHz spectrum price has been cut by 43% to Rs66/MHz pan-India, it remains very expensive and is unlikely to find any bidders.
- ▶ **Reserve price = final price?** We expect the final auction prices across spectrums to be equal to the reserve prices due to: 1) significant spectrum supply, and 2) likely limited demand for expiring spectrums. Bharti has 57MHz in 1800MHz band and 6.2MHz in 900MHz band coming up for renewal in CY21, but it has amassed huge spectrum via M&As, which should significantly lower its renewal requirement in the upcoming auction. VIL has 46MHz spectrum in 1800MHz band and 6.2MHz in 900MHz due for renewal, and we expect very little renewal requirement for VIL as well.

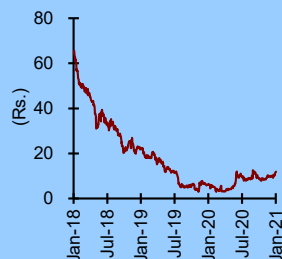
Telecom

Sector update

Bharti Airtel



Vodafone Idea Ltd



Research Analysts:

Sanjesh Jain

sanjesh.jain@icicisecurities.com
+91 22 6637 7153

Sameer Pardikar

sameer.pardikar@icicisecurities.com
+91 22 2277 7637

Spectrum auction timeline: 5th Feb'21 is the key date

The next spectrum auction is scheduled to begin on 1st Mar'21. However, the crucial date to watch for is 5th Feb'21, the final date for interested operators to submit their applications. The earnest money deposit would provide operators intension for spectrum investments. We expect the upcoming auction to be restricted to airwaves coming up for renewal, and we don't expect the 700MHz spectrum to find bidders.

Table 1: Spectrum auction timeline

Event	Date
Pre-bid conference	12-Jan-21
Last date for seeking clarifications on NIA	15-Jan-21
Clarifications to NIA	28-Jan-21
Last date for submission of Applications	5-Feb-21
Publication of Ownership details of Applicants	12-Feb-21
Bidder Ownership Compliance Certificate	15-Feb-21
Pre-qualification of Bidders	19-Feb-21
Last date of withdrawal of applications	22-Feb-21
Final List of bidders	24-Feb-21
Mock Auction	26-Feb-21
Start of the Auction	1-Mar-21
Payment of the Successful Bid Amount	Within 10 calendar days of the issue of demand note

Source: DoT, I-Sec research

Huge spectrum supplies across bands amid limited demand. Spectrum quantity also includes airwaves due for renewal in 2021

Table 2: Excessive spectrum supply

Circles (MHz)	700 (Paired)	800 (Paired)	900 (Paired)	1800 (Paired)	2100 (Paired)	2300 (Unpaired)	2500 (Unpaired)
Metros							
Delhi	30	12.5	1.0	15.4	15	20	20
Mumbai	30	10.0	1.0	15.6	10	20	20
Kolkata	30	12.5	3.0	14.4	10	20	20
A' Circle							
Maharashtra	30	15.0	3.0	22.2	5	20	10
Gujarat	30	6.3	3.0	17.8	10	20	10
A.P.	30	13.8	3.0	12.6	15	20	30
Karnataka	30	13.8	3.2	21.0	10	20	40
T.N.	30	13.8	17.0	17.6	-	20	40
B' Circle							
Kerala	30	13.8	4.6	16.4	5	20	-
Punjab	30	11.3	-	19.4	5	40	10
Haryana	30	10.0	0.2	19.4	5	40	-
U.P.(W)	30	12.5	1.2	19.4	10	40	-
U.P.(E)	30	12.5	5.2	15.0	-	40	-
Rajasthan	30	7.5	-	16.8	-	40	-
M.P.	30	12.5	4.6	15.0	10	20	-
W.B.	30	11.3	4.6	5.2	10	20	-
C' Circle							
H.P.	30	10.0	4.6	19.0	15	20	10
Bihar	30	12.5	9.2	8.6	5	20	10
Odisha	30	11.3	4.6	5.8	10	20	-
Assam	30	2.5	4.6	3.0	10	20	-
N.E.	30	2.5	3.8	-	10	20	-
J&K	30	2.5	-	14.0	5	40	10
Total	660	230.0	81.4	313.6	175	560	230

Source: DoT, I-Sec research

Final reserve prices: 800MHz prices are lower than Oct'16 auction reserve price while 1,800/2,300MHz prices are higher

Table 3: Spectrum reserve prices for 800MHz band

Circles (Rs mn/ MHz)	Final reserve price	TRAI reserve price	Final price vs TRAI reserve price (%)	Oct-16 auction discovered / reserve price	Final reserve price vs Oct-16 final price (%)	Earnest money deposit (Rs mn/ block)	Eligibility points per block
Metros							
Delhi	6,400	6,400	-	8,480	(24.5)	1,200	600
Mumbai	7,270	7,270	-	7,270	-	1,200	600
Kolkata	1,600	1,600	-	1,600	-	300	150
A' Circle							
Maharashtra	5,100	5,100	-	7,990	(36.2)	600	300
Gujarat	3,850	3,850	-	3,354	14.8	600	300
A.P.	3,900	3,900	-	6,060	(35.6)	600	300
Karnataka	1,920	1,920	-	3,030	(36.6)	300	150
T.N.	1,740	1,740	-	3,600	(51.7)	300	150
B' Circle							
Kerala	1,570	1,570	-	2,430	(35.4)	300	150
Punjab	1,570	1,570	-	1,367	14.9	300	150
Haryana	570	570	-	570	-	75	30
U.P.(W)	1,610	1,610	-	1,820	(11.5)	300	150
U.P.(E)	2,510	2,510	-	2,190	14.6	300	150
Rajasthan	2,660	2,660	-	2,320	14.7	600	300
M.P.	1,430	1,430	-	4,080	(65.0)	300	150
W.B.	740	740	-	820	(9.8)	150	60
C' Circle							
H.P.	240	240	-	240	-	30	10
Bihar	1,360	1,360	-	1,360	-	300	150
Odisha	470	470	-	570	(17.5)	75	30
Assam	640					150	60
N.E.	150					30	10
J&K	150					30	10
Total	47,450	46,510		59,151		8,040	3,960

Source: DoT, I-Sec research

Table 4: Spectrum reserve prices for 900MHz band

Circes (Rs mn/ MHz)	Final reserve price	TRAI reserve price	Final price vs TRAI reserve price (%)	Oct-16 auction discovered / reserve price	Final reserve price vs Oct- 16 final price (%)	Earnest money deposit (Rs mn/ block)	Eligibility points per block
Metros							
Delhi	5,850					150	60
Mumbai	6,910					150	60
Kolkata	2,210					75	30
A' Circle							
Maharashtra	5,230					150	60
Gujarat	3,730	3,730	-			75	30
A.P.	4,170					150	60
Karnataka	2,380	2,380	-			75	30
T.N.	2,350	2,350	-			75	30
B' Circle							
Kerala	1,990					75	30
Punjab	-					-	-
Haryana	1,020	1,020	-			30	10
U.P.(W)	2,110	2,110	-			75	30
U.P.(E)	2,620	2,620	-			75	30
Rajasthan	-					-	-
M.P.	1,950					75	30
W.B.	1,240					30	10
C' Circle							
H.P.	370					5	1
Bihar	2,010	2,010	-			75	30
Odisha	860					10	3
Assam	830					10	3
N.E.	230					5	1
J&K	-					-	-
Total	48,060	16,220				1,365	538

Source: DoT, I-Sec research

Table 5: Spectrum reserve prices for 1800MHz band

Circes (Rs mn/ MHz)	Final reserve price	TRAI reserve price	Final price vs TRAI reserve price (%)	Oct-16 auction discovered / reserve price	Final reserve price vs Oct-16 final price (%)	Earnest money deposit (Rs mn/ block)	Eligibility points per block
Metros							
Delhi	4,570	4,570	-	3,990	14.5	150	80
Mumbai	5,610	5,610	-	4,892	14.7	150	60
Kolkata	1,730	1,730	-	1,512	14.5	30	12
A' Circle							
Maharashtra	3,650	3,650	-	3,180	14.8	75	40
Gujarat	2,730	2,730	-	2,380	14.7	75	24
A.P.	2,790	2,790	-	2,430	14.8	75	24
Karnataka	1,090	1,090	-	1,850	(41.1)	30	12
T.N.	1,000	1,000	-			30	40
B' Circle							
Kerala	950	950	-	830	14.5	30	24
Punjab	880	880	-	770	14.3	30	12
Haryana	570	570	-	493	15.6	10	4
U.P.(W)	1,150	1,150	-	1,003	14.7	30	12
U.P.(E)	1,530	1,530	-	1,332	14.9	30	12
Rajasthan	1,050	1,050	-	919	14.3	30	10
M.P.	950	950	-	830	14.5	30	12
W.B.	530	530	-	460	15.2	10	4
C' Circle							
H.P.	180	180	-	160	12.5	5	1
Bihar	880	880	-	620	41.9	30	12
Odisha	270	270	-	380	(28.9)	5	4
Assam	460	460	-	400	15.0	10	3
N.E.	170	130	30.8	110	54.5	5	1
J&K	170	150	13.3	130	30.8	5	1
Total	32,910	32,850	0.2	28,670	14.8	875	404

Source: DoT, I-Sec research

Table 6: Spectrum reserve prices for 2100MHz band

Circlces (Rs mn/ MHz)	Final reserve price	TRAI reserve price	Final price vs TRAI reserve price (%)	Oct-16 auction discovered / reserve price	Final reserve price vs Oct-16 final price (%)	Earnest money deposit (Rs mn/ block)	Eligibility points per block
Metros							
Delhi	6,350	6,350	-	5,540	14.6	4,800	2,000
Mumbai	5,280	5,280	-	4,610	14.5	2,400	1,500
Kolkata	1,150	1,150	-	1,160	(0.9)	600	300
A' Circle							
Maharashtra	3,910	3,910	-	3,410	14.7	2,400	1,000
Gujarat	1,810	1,810	-	2,580	(29.8)	1,200	600
A.P.	1,850	1,850	-	2,720	(32.0)	1,200	600
Karnataka	910	910	-	3,280	(72.3)	600	300
T.N.	3,940	3,940	-	3,440	14.5	2,400	1,000
B' Circle							
Kerala	2,030	2,030	-	1,770	14.7	1,200	600
Punjab	1,040	1,040	-	910	14.3	600	300
Haryana	630	630	-	550	14.5	300	100
U.P.(W)	760	760	-	1,110	(31.5)	600	300
U.P.(E)	1,260	1,260	-	1,100	14.5	600	300
Rajasthan	-	-	-	-	-	-	-
M.P.	680	680	-	1,230	(44.7)	600	300
W.B.	350	350	-	520	(32.7)	300	100
C' Circle							
H.P.	120	120	-	200	(40.0)	75	25
Bihar	990	990	-	860	15.1	600	300
Odisha	440	440	-	380	15.8	300	100
Assam	300	300	-	460	(34.8)	150	75
N.E.	60	60	-	120	(50.0)	30	25
J&K	130	130	-	110	18.2	75	25
Total	33,990	33,990	-	36,060	(5.7)	21,030	9,850

Source: DoT, I-Sec research

Table 7: Spectrum reserve prices for 2300MHz band

Circlces (Rs mn/ MHz) - unpaired	Final reserve price	TRAI reserve price	Final price vs TRAI reserve price (%)	Oct-16 auction discovered / reserve price	Final reserve price vs Oct- 16 final price (%)	Earnest money deposit (Rs mn/ block)	Eligibility points per block
Metros							
Delhi	1,640	1,640	-	1,430	14.7	2,400	1,500
Mumbai	1,670	1,670	-	1,460	14.4	2,400	1,500
Kolkata	380	380	-	330	15.2	600	300
A' Circle							
Maharashtra	720	720	-	631	14.2	1,200	600
Gujarat	700	700	-	612	14.4	1,200	600
A.P.	780	780	-	683	14.1	1,200	600
Karnataka	1,120	1,120	-	980	14.3	1,200	600
T.N.	1,510	1,510	-	1,320	14.4	2,400	1,000
B' Circle							
Kerala	200	200	-	176	13.8	300	150
Punjab	210	210	-	-	-	300	150
Haryana	80	80	-	-	-	150	60
U.P.(W)	120	120	-	-	-	150	60
U.P.(E)	90	90	-	-	-	150	60
Rajasthan	60	60	-	-	-	75	30
M.P.	90	90	-	82	9.8	150	60
W.B.	60	60	-	50	20.0	75	30
C' Circle							
H.P.	10	10	-	10	-	10	3
Bihar	70	70	-	62	13.8	75	30
Odisha	50	50	-	40	25.0	75	30
Assam	20	20	-	20	-	30	10
N.E.	10	10	-	10	-	10	3
J&K	10	10	-	-	-	10	3
Total	9,600	9,600	-			14,160	7,379

Source: DoT, I-Sec research

Table 8: Spectrum reserve prices for 2500MHz band

Circlces (Rs mn/ MHz) - unpaired	Final reserve price	TRAI reserve price	Final price vs TRAI reserve price (%)	Oct-16 auction discovered / reserve price	Final reserve price vs Oct-16 final price (%)	Earnest money deposit (Rs mn/ block)	Eligibility points per block
Metros							
Delhi	1,640	1,640	-	1,430	14.7	2,400	1,500
Mumbai	1,670	1,670	-	1,460	14.4	2,400	1,500
Kolkata	380	380	-	330	15.2	600	300
A' Circle							
Maharashtra	660	660	-	580	13.8	600	600
Gujarat	450	450	-	390	15.4	600	600
A.P.	780	780	-	680	14.7	1,200	600
Karnataka	980	980	-	980	-	1,200	600
T.N.	1,320	1,320	-	1,320	-	1,200	1,000
B' Circle							
Kerala	-	-	-	-	-	-	-
Punjab	240	240	-	210	14.3	300	150
Haryana	-	-	-	-	-	-	-
U.P.(W)	-	-	-	-	-	-	-
U.P.(E)	-	-	-	-	-	-	-
Rajasthan	-	-	-	-	-	-	-
M.P.	-	-	-	-	-	-	-
W.B.	-	-	-	-	-	-	-
C' Circle							
H.P.	10	10	-	10	-	10	3
Bihar	70	70	-	60	16.7	75	30
Odisha	-	-	-	-	-	-	-
Assam	-	-	-	-	-	-	-
N.E.	-	-	-	-	-	-	-
J&K	10	10	-	10	-	10	3
Total	8,210	8,210	-	7,460	10.1	10,595	6,886

Source: DoT, I-Sec research

Table 9: Spectrum reserve prices for 700MHz band

Circlces (Rs mn/ MHz)	Final reserve price	TRAI reserve price	Final price vs TRAI reserve price (%)	Oct-16 auction discovered / reserve price	Final reserve price vs Oct-16 final price (%)	Earnest money deposit (Rs mn/ block)	Eligibility points per block
Metros							
Delhi	9,150	9,150	-	-	-	4,800	3,000
Mumbai	11,220	11,220	-	-	-	4,800	3,000
Kolkata	3,470	3,470	-	-	-	2,400	1,500
A' Circle							
Maharashtra	7,290	7,290	-	-	-	4,800	3,000
Gujarat	5,460	5,460	-	-	-	2,400	1,500
A.P.	5,570	5,570	-	-	-	2,400	1,500
Karnataka	2,190	2,190	-	-	-	1,200	600
T.N.	1,990	1,990	-	-	-	1,200	600
B' Circle							
Kerala	1,900	1,900	-	-	-	1,200	600
Punjab	1,770	1,770	-	-	-	1,200	600
Haryana	1,130	1,130	-	-	-	600	300
U.P.(W)	2,300	2,300	-	-	-	1,200	600
U.P.(E)	3,050	3,050	-	-	-	2,400	1,500
Rajasthan	2,110	2,110	-	-	-	1,200	600
M.P.	1,900	1,900	-	-	-	1,200	600
W.B.	1,050	1,050	-	-	-	600	300
C' Circle							
H.P.	370	370	-	-	-	300	150
Bihar	1,750	1,750	-	-	-	1,200	600
Odisha	540	540	-	-	-	300	150
Assam	920	920	-	-	-	600	300
N.E.	340	250	36.0	-	-	300	150
J&K	340	300	13.3	-	-	300	150
Total	65,810	65,680	0.2			36,600	21,300

Source: DoT, I-Sec research

Spectrum holding cap

Table 10: Spectrum holding caps provide enough headroom

Circles	Maximum cap (MHz)	
	Sub-GHz	Overall
Metros		
Delhi	70.7	157.9
Mumbai	70.7	157.9
Kolkata	70.7	157.9
A' Circle		
Maharashtra	70.7	157.9
Gujarat	67.7	155.8
A.P.	70.7	157.9
Karnataka	70.7	157.9
T.N.	70.7	157.9
B' Circle		
Kerala	70.7	157.9
Punjab	69.3	156.9
Haryana	66.1	154.6
U.P.(W)	66.1	154.6
U.P.(E)	70.7	157.9
Rajasthan	66.1	154.6
M.P.	70.7	157.9
W.B.	70.7	157.9
C' Circle		
H.P.	70.7	157.9
Bihar	70.7	157.9
Odisha	70.7	157.9
Assam	65.7	154.4
N.E.	65.7	154.4
J&K	61.1	151.1

Source: DoT, I-Sec research

Minimum spectrum bid quantity

Table 11: Spectrum bid quantity mostly unchanged vis-à-vis previous auction

MHz	Existing operator	New Entrant		Block size
		Availability	Other	
700	NA	5.0		2 x 5MHz
800	1.3	5.0	Minimum available	2 x 1.25MHz
900	0.2	5.0	0.2	2 x 200KHz
1800	0.2	5.0	0.2	2 x 200KHz
2100	5.0	5.0		2 x 5MHz
2300*	10.0	10.0		1 x 10MHz
2500*	10.0	10.0		1 x 10MHz

Source: DoT, I-Sec research

Price increment in each clock round

Table 12: Potential price increment in each round of auction (800MHz)

Excess demand (in blocks of 2x1.25 MHz)	Price increment as % of previous clock round price
Less than zero (negative)	0.0%
Zero	0.5%
1	1.0%
2	1.5%
3	2.0%
4	2.5%
5 and greater	3.0%

Source: DoT, I-Sec research

Table 13: Potential price increment in each round of auction (900 and 1800MHz)

Excess demand (in blocks of 2x0.2 MHz)	Price increment as % of previous clock round price
Less than zero (negative)	0.0%
From zero up to 5	0.5%
>5 up to 10	1.0%
>10 up to 15	1.5%
>15 up to 20	2.0%
>20 up to 25	2.5%
>25 up to 30	3.0%
>30 up to 35	3.5%
>35 up to 40	4.0%
>40 up to 45	4.5%
>45 up to 50	5.0%
>50 up to 55	5.5%
>55 up to 60	6.0%
>60	6.5%

Source: DoT, I-Sec research

Table 14: Potential price increment in each round of auction (2100MHz)

Excess demand (in blocks of 2x5 MHz)	Price increment as % of previous clock round price
Less than zero (negative)	0.0%
Zero	0.5%
1	1.0%
2	1.5%
3	2.0%
4	2.5%
Greater than 4	3.0%

Source: DoT, I-Sec research

Table 15: Potential price increment in each round of auction (2300 and 2500MHz)

Excess demand (in blocks of 2x5 MHz)	Price increment as % of previous clock round price
Less than zero (negative)	0.0%
Zero	0.5%
1	1.0%
2	5.0%
Greater than 2	10.0%

Source: DoT, I-Sec research

Table 16: Potential price increment in each round of auction (700MHz)

Excess demand (in blocks of 2x5 MHz)	Price increment as % of previous clock round price
Less than zero (negative)	0.0%
Zero	0.5%
1	1.0%
2	1.5%
3	1.5%
Greater than or equal to 4	2.5%

Source: DoT, I-Sec research

Spectrum coming for renewal

Table 17: Bharti / VIL unlikely to renew entire spectrum coming up for renewal

MHz	Bharti Airtel		Vodafone Idea	
	900	1800	900	1800
Metros				
Delhi		-		8.0
Mumbai		9.2		-
Kolkata		-		-
A* Circle				
Maharashtra		8.2		-
Gujarat		6.2		-
A.P.		-		6.2
Karnataka		-		8.0
T.N.	6.2	6.8	6.2	1.0
B* Circle				
Kerala		6.2		-
Punjab		-		6.2
Haryana		6.2		-
U.P.(W)		6.2		-
U.P.(E)		-		6.2
Rajasthan		-		6.2
M.P.		8.0		-
W.B.		-		-
C* Circle				
H.P.		-		4.4
Bihar		-		-
Orissa		-		-
Assam		-		-
N.E.		-		-
J&K		-		-
Total	6.2	57.0	6.2	46.2

Source: DoT, I-Sec research

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, *Sanjesh Jain, PGDM; Sameer Pardikar, 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 generally prohibits its analysts, persons reporting to analysts and their relatives 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.

Since associates of ICICI Securities 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.