



**Comments on Consultation Paper on
Valuation and Reserve Price of Spectrum**

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1. Reliance Communications Ltd (RCOM) welcomes the opportunity to comment on issues concerning Valuation and Reserve Price of Spectrum. RCOM's comments on consultation paper on Auction of Spectrum are entirely without prejudice to and under reservation of our right to receive 2x6.2 MHz GSM Contracted spectrum against the entry fee already paid.

Overview

- i. 900 MHz spectrum should be completely reformed and put to auction. No spectrum in 1800 MHz spectrum band is required to be reserved for reformatting/administrative allocation.
- ii. We do not agree with the TRAI that there is any reduction in spectrum demand for 1800/900 MHz spectrum bands. The subdued spectrum demand in previous auctions was mainly on account of coordinated bidding and not because of 900MHz/1800 MHz spectrum pricing and the same has been corroborated by CAG.
- iii. The price of 1800 MHz has been recently arrived at in the 18 circles and the reserve price in the upcoming auction in these 18 circles has to be the last winning price of Nov. 2012 i.e. 100 % of the value of the spectrum. Ration of reserve price to spectrum value to be 100% is also desirable in remaining circles especially when chances of strategic reduction of spectrum demand loom large.
- iv. E-GSM band proposal should not be considered as it would not only disrupt and significantly impact CDMA network operations but will also cost the operators huge investment in terms of electronics , filters etc. It may be noted CDMA operators have existing right under UAS License to use CDMA spectrum till 2021 and therefore option to use it as EGSM/liberalized spectrum only rests with the existing 800 MHz spectrum users.
- v. TRAI should recommend the reserve price of spectrum only for the balance 4 circles in respect of 1800 MHz GSM spectrum and 14 circles in respect of 800 MHz CDMA spectrum. Spectrum valuation for 800 MHz spectrum band is available for Delhi and Karnataka. Admittedly GSM

spectrum in 1800 MHz is more valuable than 800 MHz. Therefore out of remaining four circles , reserve price for 1800 MHz for Delhi and Karnataka can be deduced from the price of CDMA spectrum as it would have to be higher than the discovered price for 800 MHz in these circles. Spectrum price of Mumbai can be related to Delhi price and the price of spectrum for Rajasthan can be deduced from identical circle M. P. **No efforts should be made to subsidies the GSM spectrum prices for the Metros at the cost of B & C circles subscribers, where the teledensity continuous to be far lower than in Metros.**

- vi. Regression models proposed in consultation paper for estimating spectrum value cannot be used as results for circles like Delhi, Mumbai and Rajasthan and Karnataka. The results are not good fit and therefore statistically incorrect.
- vii. Spectrum valuation for 900 MHz should be twice the 1800 MHz spectrum band. The COAI itself had admitted that the total impact of refarming on account of Capex and Opex is estimated to be about Rs 1,15,500 crore s. , Thus the advantage of operating services in 900 MHz is immense and fully justifies spectrum valuation of 900 MHz to be atleast twice the value of 1800 MHz spectrum. This will also create a level playing field with those operators who have access to only 1800 MHz spectrum.
- viii. The valuation of 800 MHz is much lower than the reserve price proposed in the previous auction due to least possibility of liberalized use for higher technologies and poor ecosystem. Therefore reserve price for 800 MHz spectrum band in 14 circles requires drastic reduction.
- ix. The current ratio of reserve price for 800, 900 and 1800 MHz spectrum represents the relative value of these spectrum bands. In case of any reduction in reserve price of 900/1800 MHz price, the adjustment would be needed out for 800 MHz spectrum band so to maintain the relative value of these spectrum bands.
- x. CDMA being a dying service ,CDMA operators may not like to take spectrum for 20 years and as such may be permitted to bid for 800 MHz auctioned spectrum for 3, 5, 7, 10, 15 or 20 years or co-terminus with the validity of the existing spectrum so that at least the existing spectrum is put to use.
- xi. Flat spectrum usage charge should not be applied as it is anti-competition and technically irrational. The decision of flat SUC is likely to cause a loss of around Rs 50,000 crores over the validity of license to the Government

and gain to few operators. Operators like Airtel, Vodafone, Videocon, Telewings and MTS have recently acquired spectrum through auction with full realization that SUC will be at the prevailing rates i.e. escalating basis. 127.5 MHz of GSM spectrum was acquired by these 4 operators during November, 2012 auction. Similarly, 30 MHz of CDMA spectrum was acquired by one operator in March, 2013 auction. This escalating SUC principle was factored whole bidding by these operators. Any reduction in SUC at this stage will be seen as post tender concession and will reopen all cases related to the acquisition of spectrum in the earlier auctions. This may also lead to legal challenges and therefore current SUC charges should be left undisturbed.

- xii. Urgently review AGR definition to include revenue from telecom activities only and to avoid any double levy of License fee/SUC on any revenue.
- xiii. TRAI had earlier recommended the reservation of 1900 MHz spectrum for growth path of CDMA operators. Since the echo system for CDMA is poor, it is suggested that this 10 MHz of 1900 MHz spectrum may be exchanged with Ministry of Defence for 2100 MHz. This will give additional 2 slots of 3G spectrum. This 3G spectrum can be auctioned by DOT giving priority to CDMA operators as this 3G spectrum is at the expense of surrender of 1900 MHz spectrum by CDMA operators .

Executive Summary

2. RCOM does not support any rethinking on refarming of 900 MHz spectrum. TRAI should ensure that legacy distortions are not exacerbated, such that each operator continues to compete at the same starting position. The refarming issue has been settled and complete 900 MHz spectrum is required to be put to auction. No incumbent operator can be allowed to retain refarmed spectrum in an unfair, discriminatory and inconsistent manner.. RCOM's view is that Government should hold a clear auction in which all service providers have equal chance to obtain spectrum. The safeguards like giving priority to renewal licenses are already build in the auction rules to ensure continuity of service.
3. Significantly, asymmetrical spectrum holdings would clearly have adverse competitive implication of liberalization. At present many operators like RCOM have only 4.4 MHz spectrum even though they have already paid for the contracted spectrum of 6.2 MHz , while incumbent operators hold upto 10 MHz spectrum. Unless TSPs with small spectrum holding of 4.4 MHz are allocated at least 0.6 MHz additional spectrum, they would not be able to deploy advanced technology. Hence TRAI should work towards equitable distribution of spectrum so that benefits of liberalization are available to all operators for level playing field and fair competition is ensured in the market.

4. RCOM disagrees with TRAI's proposals for the EGSM band as it would disrupt and significantly impact CDMA network operations. CDMA operators have right to use CDMA spectrum till 2021/2024 and therefore its liberalized use for GSM services only rests with existing occupants of 800 MHz spectrum band.
5. RCOM disagrees with the TRAI analysis of Spectrum Usage Charge(SUC) as it will benefit only selected operators who have held large quantum of spectrum and will cause unwarranted loss of billions of rupees to the Government exchequer. The policy of escalating SUC for higher quantum of allocated spectrum has scientific and economic rationale. The relationship between the incremental amount of spectrum and the capacity of the network to carry additional traffic is non-linear i.e. the traffic increases in a greater proportion than the proportion of increase in spectrum. Therefore flat SUC, irrespective of the amount of spectrum holding would not be justified. Further, the escalating SUC discourages spectrum hoarding and promotes efficient utilization of spectrum. Incumbent operators have large chunk of spectrum and thus should pay higher SUC. It is estimated that at current spectrum holding if flat SUC is applied at 3% then government will face a loss of about Rs 54,000 crores over the validity of spectrum and consequentially only a few selected operators will get benefit. TRAI has to keep it in view that a number of operators have recently acquired GSM and CDMA spectrum through auction in which the SUC was on the basis of escalating charges and any attempt to make it flat will be changing the conditions post auction and may lead to legal challenges.
6. RCOM does not agree with the TRAI's understanding that there is reduced demand for GSM spectrum because of deteriorating financial performance and overall financial position of the sector, and, the general slowdown in the economy. There is tremendous demand for spectrum especially in metro cities where licenses are expiring. As being pointed out by CAG, the GSM spectrum subdued demand is only account of possible cartelization and not because of 900MHz/1800 MHz spectrum pricing. However, there is reduced demand for 800 MHz CDMA spectrum due to poor echo-system.
7. There is no need to again determine reserve prices for all circles as spectrum value for 1800 MHz spectrum band as it has already been discovered in Nov'2012 auction for 18 circles i.e all circles except Delhi, Mumbai, Karnataka and Rajasthan. Any reduction in the price already discovered in auction using any econometric models would not be valid and may cause unwarranted loss to the government and legal complications and gain to a few selected operators. No efforts should be made to subsidize the GSM spectrum prices for the Metros at the cost of B & C circles subscribers, where the teledensity continues to be far lower than in Metros.

8. It may be kept in mind that spectrum value even for Delhi and Karnataka is available for 800 MHz spectrum band. The discovered price for 1.25 MHz block in 800 MHz for Delhi and Karnataka is Rs 450.49 crs and Rs 214.58 crs respectively. Admittedly GSM spectrum in 1800 MHz spectrum band is of much higher value compared to CDMA 800 MHz spectrum. Choice of econometric models given in the consultation paper give anomalous results of 1800 MHz spectrum value even lower than 800 MHz spectrum.
9. The lower frequency range of 900 MHz spectrum has coverage and quality advantage which means fewer base stations and better indoor coverage. The 900 MHz not only has advantage in terms of CAPEX and OPEX savings but also there is additional advantage of deploying 3G systems in 900 MHz spectrum band. In dense areas 3G capacity is much higher compared to 2G systems due to the difference in the way 2G and 3G technologies use spectrum. However, in 3G networks, the number of users which can be supported and the data rates which can be offered are directly linked to the loss which a signal undergoes in reaching the users. As loss is substantially lower in 900 MHz, 3G operators in densely populated areas realize much higher benefit in terms of capacity. Thus benefit of additional capacity should be taken into account besides CAPEX and OPEX savings to decide price multiple for 900 MHz spectrum band. RCOM believes the current price multiple of 2 times the 1800 MHz spectrum is correct. It may kindly be noted that as per the estimate of COAI, the operators holding of 900 MHz spectrum had gained about Rs. 115500 crores of rupees in Capex and Opex. This had created a non level playing field in the past and as such this should not be allowed to continue
10. In terms of propagation characteristics, 800MHz and 900MHz may be similar but entirely different technologies are deployed in these bands. 800 MHz and 900 MHz are not complementary or substitutable like 900/1800/2100 MHz bands and thus their valuations are different. The Eco-system for CDMA services is deteriorating and number of customers worldwide on CDMA platform is less than 10% of the total mobile base against 90% for GSM technology. CDMA equipment and devices have much higher prices compared to GSM. Devices supporting CDMA are limited leading to higher cost and poor acceptability. More so, available 800 MHz spectrum can not be used as liberalized spectrum. Thus CDMA spectrum in 800 MHz has much lesser value compared to 900 MHz spectrum band and only 20% of the 1800 MHz spectrum value.
11. The spectrum in 800 MHz CDMA band is less than 5 MHz in many circles. The CDMA operators, in the absence of availability of sufficient spectrum will have to continue in the un-liberalized form for 2G services. With the poor eco-system as mentioned in the preceding para for 800 MHz spectrum band, the long term sustainability of CDMA based operations is really doubtful. As CDMA spectrum is not sufficient for liberalized use and the continuity of CDMA operations is not

certain in future due to dwindling Eco-system, the CDMA operators will be hesitant to bid for spectrum with a validity of 20 years, Authority may kindly recommend the validity of the 800 MHz auctioned spectrum as 3, 5, 7, 10, 15 or 20 years or co-terminus with the validity of the existing spectrum. This will also help the Govt. to raise revenues from this spectrum.

12. When there are doubts of cartelization, chances of strategic reduction of demand or collusive behavior is possible. With low reserve prices, there would be a risk that the auction might not be competitive and may lead to the distorted auction outcomes. To avoid risk of reduced competitiveness within the auction, the reserve prices should be fixed closer to market prices. As market value of 18 of 22 circles is already available, the reserve price should be fixed at market value only.
13. TRAI had earlier recommended the reservation of 1900 MHz spectrum for growth path of CDMA operators. Since the Echo-system for CDMA is poor, it is suggested that this 10 MHz of 1900 MHz spectrum may be exchanged with defence for 2100 MHz. This will give additional 2 slots of 3G spectrum. This 3G spectrum can be auctioned by DOT giving priority to CDMA operators as this 3G spectrum is at the expense of surrender of 1900 MHz spectrum by CDMA operators

RCOM's Specific comments on Issues raised in the Consultation Paper

Q1 What method should be adopted for reframing of the 900 MHz band so that the TSPs whose licenses are expiring in 2014 onwards get adequate spectrum in 900/1800 MHz band for continuity of services provided by them?

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Q 2 In case spectrum is to be “reserved” for such TSPs, should it be restricted to licences expiring in 2014 (metros) or include licenses expiring afterwards (LSAs other than metros)?

RCOM Comments

- i. The government in NIA dated 30.1.2013 has already taken decision that 900 MHz spectrum would be reformed and put to auction and renewal licensees, existing licensees and new licensees would have to bid in the auction to obtain 900 MHz spectrum.
- ii. Provisions for continuity of service are already available in clause 5.4.5 of NIA that “Renewal Licensees” shall be ranked on priority for the retention of spectrum up to the “Prescribed limits’, while determining the provisional

winning bidders in each round. No further safeguard is needed beyond clause 5.4.5. **Perpetuity of spectrum rights cannot be guaranteed in the name of continuity of service.**

- iii. It may be noted that when spectrum is being allocated through auction the TSPs would have to anticipate supply of spectrum in different spectrum bands and procure spectrum at the right time. In case any service provider believes that spectrum may not be available at a later date can participate in the current auction.
- iv. RCOM's view is to hold a clear auction in which all TSPs have fair chance to bid 900 MHz spectrum. A wider distribution of 900 MHz spectrum is more competitive and efficient than the current distribution, given the magnitude of the potential cost, quality and capacity advantages and the currently highly asymmetric distribution of the spectrum. Thus TRAI should not consider any approach of allocation 900 MHz spectrum amounting to a cross between assignment by auction for existing and new licensees and reservation/administrative allocation for renewal licensees.
- v. **In view of the above, clear auction should be held for 900 MHz spectrum band and no 1800 MHz spectrum is required to be reserved for licenses expiring in any year.**

Q3 Is any restriction required to be imposed on the eligibility for participation in the proposed auction?

RCOM Comments

- i. The eligibility to participate in auction cannot be linked to small spectrum holdings by Indian operators or number of players in the market. The decision on number of telecom operators in each service area should be left to the market forces and the Authority should allow market forces to play and decide on the number of operators in the market.
- ii. The eligibility for participation in Auction of Spectrum should be same as specified in the NIAs dated 28.9.2012 and 30.1.2013. All UAS / CMTS licensees and new entrants should be allowed to participate in the proposed auction subject to eligibility criteria and conditions relating to spectrum caps.
- iii. **To ensure continuity of service for renewal licensees and sufficient spectrum availability for existing licensees, following priorities may be continued/added in auction rules:**

- a. “Renewal Licensees” shall be ranked on priority for the retention of spectrum up to the “Prescribed limits’ or the spectrum held by them at the time of renewal of licensees whichever is lower, while determining the provisional winning bidders in each round;
- b. “Existing Licensees” should be ranked next on priority for the retention of spectrum up to the “Prescribed limits’, while determining the provisional winning bidders in each round.

Q4 Should India adopt E-GSM band, in view of the diminishing interest in the CDMA services? If yes,

- a) **How much spectrum in the 800 MHz band should be retained for CDMA technology?**
- b) **What are the issues that need to be addressed in the process?**
- c) **What process should be adopted for migration considering the various issues involved?**

RCOM Comments

- i. The existing CDMA operators have been discriminated from the beginning in terms of subscriber based norms for spectrum allocation, quantum of contracted spectrum etc. These factors have led to decline of CDMA services in India. CDMA acceptance in India is already lower because choice of CDMA devices is less and prices are higher compared to GSM devices. In this background, if EGSM band is culled out from the CDMA spectrum band, the CDMA services will die prematurely impairing billions of dollars of investment and services to about 75 million subscribers.
- ii. TRAI in 2006 had recommended allocation of 450 MHz and 1900 MHz spectrum bands as a growth path for CDMA operations. Unfortunately, even today no growth path has been given to the CDMA operators and now they would have to struggle even for little spectrum allocated to them.
- iii. Adoption of E-GSM band will require vacation of 880-890 MHz band frequency and restricting CDMA operations in only 10 MHz spectrum 870-890 MHz. The proposed CDMA spectrum would thus be sufficient for only 2 operators and therefore others would be forced to close their operations. Further EGSM proposal would require migration of complete network operation into new frequencies which is not an easy task. This would

impact quality of service for a long period of time. Thus EGSM proposal is highly unfair and discriminatory towards CDMA operators.

- iv. The CDMA operators even today support around 75 million subscriber base and provide them most affordable telecom services. CDMA operators also provide high speed internet services in thousands of cities and towns in the country. The reach of CDMA based internet services is country wide and support significant number of internet subscribers. The discriminatory approach such as relocating CDMA operations and cull out EGSM band would be death knell for CDMA operations and wipe out the only credible challenger to GSM industry.
- v. TRAI has proposed that CDMA spectrum allocated to BSNL/MTNL should also be withdrawn as they are not providing full mobile services and number of subscriber being supported are very few. However, the CDMA spectrum allocated to BSNL is being used to provide RDELs and it may not be a good option to withdraw source of connectivity to rural areas. Otherwise also the vacation of spectrum from BSNL and MTNL will take considerable long time and uncertainty about CDMA operations will prevail till then. **Thus EGSM band cannot be allocated culled out from CDMA band for use by any GSM operator.**
- vi. It may also be noted that CDMA operators have entered into a valid contract with the Government in 2001 and earned right to use CDMA spectrum till 2021. Hence, proposal to relocate operations in alternative frequencies etc will make the Government contract unreliable and also raise number of other legal issues. In case the government believes that 880-890 MHz spectrum band can be better utilized for GSM services then this offer can only be available for the existing occupants who have right to use this spectrum till 2021. **Therefore, adoption of EGSM can only be for existing occupants of 880-890 MHz spectrum band.**
- vii. The EGSM band proposal for any operator would create unnecessary uncertainty and may impact further investment especially in the CDMA based data services sector. However, flexible use of 880-890 MHz spectrum by existing operators would revive interest in this spectrum band and would encourage investment by existing users.
- viii. **In light of above facts, E-GSM band proposal should not be considered as it would not only disrupt and significantly impact CDMA network operations but will also cost the operators huge investment in terms of electronics, filters etc. It may be noted CDMA operators have existing right under UAS License to use CDMA spectrum till 2021 and therefore option to use it as EGSM/liberalized**

spectrum may only be provided to the existing 800 MHz spectrum users.

Q5 should roll out obligations for new/existing/renewal/quashed licenses be different? Please give justification in support of your answer.

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Q6 Is there a need to prescribe additional roll-out obligations for a TSP who acquires spectrum in the auction even if it has already fulfilled the prescribed roll-out obligations earlier?

RCOM Comments

- i. The current rollout obligation given in the UASL is coverage of 10% DHQs/ Towns by end of 1st year and coverage of 50% DHQs/ Towns at end of 3 years. The existing licensees have already met rollout obligations specified in the UASL.
- ii. In NIAs dated Sept, 2012 and 30.1.2013, DoT has specified additional rollout obligations to cover 10% of the Block Headquarters (BHQs) before end of three years and additional 10% of the BHQs in each of two subsequent years i.e. at least 20% and 30% coverage of the BHQs at the end of 4th and 5th year respectively.
- iii. Given that spectrum is a valuable and scarce natural resource, any spectrum allocated to TSPs should be efficiently used. Therefore, rollout requirements should be same for all kind of TSPs.
- iv. It may be noted that TSPs who received spectrum bundled with the license are operating for the last 10 to 20 years and have already achieved the current rollout obligation of covering 50% DHQs. Their coverage also exceeds even new rollout obligation of coverage of 30% BHQs in all LSAs. As such existing operators who have already met the new rollout obligation of covering 30% BHQs at end of 5th year, testing of block headquarter coverage by TERM cells should not be mandated. These TSPs may be allowed to submit self certificates in support of meeting the rollout obligation of covering minimum 30% of BHQs.
- v. **RCOM thus proposes that roll out obligation for all type of operations acquiring spectrum in the auction should be same. However,**

coverage of 50% DHQs should not be insisted in respect of those operators who have already met and demonstrated the rollout obligations. The existing operators and the operators whose licenses are due for renewal may be allowed to submit self certificates for BHQ coverage.

Q7 What should be the framework for conversion of existing spectrum holdings into liberalized spectrum?

- i. Significantly, asymmetrical spectrum holdings would clearly have adverse competitive implication of liberalization. At present, many operators like RCOM have only 4.4 MHz spectrum even though they have already paid for the full contracted spectrum of 6.2 MHz while incumbent operators hold up to 10 MHz spectrum. Unless TSPs with small spectrum holding of 4.4 MHz of GSM and 2.5/3.75 MHz of CDMA spectrum are allocated at least 0.6 MHz of additional GSM spectrum and 2.5/1.25 MHz of CDMA spectrum, they would not be able to deploy advanced technology.
- ii. The Authority at a first stage should work to allocate minimum 5 MHz spectrum to all operators so that technically it is possible to use spectrum for advanced technologies. The liberalization of spectrum at this stage will only benefit incumbent operators who have large spectrum holding and can run parallel operations of 2G as well as 3G/4G networks. Therefore, TRAI should work towards allocation of minimum 0.6 MHz of GSM spectrum to operators holding 4.4 MHz GSM spectrum and 1.25/2.5 MHz of CDMA spectrum to operators holding 3.75/2.5 MHz of CDMA spectrum.
- iii. Once minimum 5 MHz spectrum has been allocated, TSPs may be allowed to use the additional spectrum block(s) allotted through auction to deploy any technology by combining their existing spectrum holding in the same band after converting their entire existing spectrum holding into liberalized spectrum in the same band.
- iv. **RCOM thus suggests that Authority at a first stage should work to allocate minimum 5 MHz spectrum to all operators so that technically it is possible to use spectrum for advanced technologies. Accordingly, a** minimum of 0.6 MHz of GSM spectrum to operators holding 4.4 MHz GSM spectrum and 1.25/2.5 MHz of CDMA spectrum to operators holding 3.75/2.5 MHz of CDMA spectrum should be allocated.

Q8 Is it right time to permit spectrum trading in India? If yes, what should be the legal, regulatory and technical framework required for trading?

RCOM Comments

- i. Spectrum trading provides the ability to trade the rights and obligations of spectrum. In general terms, it means to transfer the rights and obligations of spectrum to another operator in return of financial gains based on mutual commercial negotiations. This transfer of spectrum may be permanent or for a limited period, may be in full or in part. However, the present licensing conditions do not permit the assignment of spectrum by a licensee to another licensee.
- ii. The issue of spectrum trading was dealt by TRAI in its consultation paper issued in 2009 and in its recommendations dated 11th May, 2010. The TRAI in these recommendation has mentioned that spectrum is a national asset with sovereign rights over it and the Government has only assigned it for 'right to use' basis to the licensee and the licensee has no ownership right to trade in it. The TRAI had recommended that it was premature to consider spectrum trading in India and as such it should not be allowed this stage. The recommendations of TRAI were accepted by the Telecom Commission.
- iii. The Minister of Communication and IT in his press release of 15th February, 2012 also announced that spectrum trading will not be allowed in India at this stage and this will be examined at a later date.
- iv. NTP'2012 approved by the Cabinet on 31st May, 2012 has envisaged a move towards liberalization of spectrum as well as to permit spectrum pooling, sharing and later trading to enable optimal utilization of spectrum through appropriate regulatory framework. Thus, the NTP has envisaged introduction of spectrum trading later i.e. after the introduction of spectrum sharing, which is also not permitted at the moment.
- v. As noted by the Authority, Mobile spectrum holding in India is very small as compared to the international scene. No operator in India has more than 10 MHz of spectrum, while many of them do not have even 5 / 6.2 MHz of CDMA/GSM spectrum while all the operators have been requesting the DOT for the allotment of additional spectrum at least up to contracted spectrum to maintain quality of service. In a scenario, where the spectrum availability with the Indian operators is poor, spectrum trading may not encouraged.

- vi. Spectrum Trading will only benefit cash rich operators, impact government revenues and encourage speculation and tendencies of spectrum hoarding. Premium on spectrum may even adversely impact tariff rates and choke competition. Therefore, trading may prove to be counterproductive.
- vii. **In view of the above it is suggested that spectrum trading should not be allowed.**

Q9 Would it be appropriate to use prices obtained in the auction of 3G spectrum as the basis for the valuation in 2013? In case the prices obtained in the auction of 3G spectrum are to be used as the basis, what qualifications would be necessary?

RCOM Comments

- (i) We are of the view that the TRAI had done due diligence while giving its recommendations on the auction of spectrum in April, 2012. The Authority had deliberated upon the various pricing models such as the price obtained in 2001 auction, indexing 2001 auction price on the basis of AGR growth, SBI PLR, WACC ,recommendation by an expert committee appointed by the Authority and 3G auction.
- (ii) The Authority had also taken into account the various factors such as teledensity, unsatisfied demand, ARPU etc and more so that the 1800 MHz spectrum is liberalized and being used throughout the world for LTE services and had accordingly come to a conclusion that price of 1800 MHz be linked with 2100 MHz auction price.
- (iii) The Authority is fully aware that 1800 MHz spectrum has been fully valued upon in 18 service areas out of 22 and as such the benchmark for the spectrum value in 18 circles has to be the price determined in the auction held in November, 2012. **Thus, it would be inappropriate to use the prices obtained in 3G auction for the proposed auction in 2013 so far as these 18 service areas are concerned.**
- (iv) Spectrum valuation for 1800 MHz has already been discovered in 18 circles i.e all circles except Delhi, Mumbai, Karnatka and Rajasthan. Any reduction in the price already discovered in these circles without any valid basis would not be correct and may lead to unnecessary litigation and

unwarranted loss of revenue for Government exchequer and gain to a few selected operators.

- (v) Further, no major change has taken place in last one year requiring review of market valuation of spectrum. On the other hand market conditions have improved during this period as the number of competitive operators has come down from 14 to a maximum of 10, ARPU level has started rising and there is an increased demand for data services. Thus we do not find any major reason requiring change in the 2012 prices of 1800 MHz spectrum.
- (vi) The Authority has to keep it in mind that the Government has already reduced the reserve price of spectrum in the 4 circles of Delhi, Mumbai, Rajasthan and Karnataka by 30%.
- (vii) It may also be of interest to note that the price of 800 MHz spectrum has already been discovered in respect of Delhi at Rs.1802 Crores for 5 MHz and admittedly liberalized 1800 MHz spectrum is far more valuable compared to the 800 MHz spectrum and as such the price of 1800 MHz spectrum in Delhi has to be much higher than Rs.1802 crores for 5 MHz. Since Mumbai is commercially far more important than Delhi, the price of spectrum in Mumbai, if not higher than Delhi would have to match it. Similarly valuation of Karnataka for 800 MHz spectrum is also available and GSM spectrum price in 1800 MHz would have to be more than the discovered price of 800 MHz for Karnataka circle.
- (viii) Valuation of spectrum for Rajasthan circle , can be referenced to the nearby circles such as Punjab / Haryana / M.P etc.
- (ix) **Although it is possible to estimate spectrum valuation using hypothetical regression or other econometric models but valuations once established in auctions should not be tinkered as those values represent the correct valuation. Any reduction in valuation would only help incumbent operators who strategically did not participate in previous auction to bring down prices.**
- (x) It may be noted that the current ratio of reserve price for 800, 900 and 1800 MHz spectrum represents the relative value of these spectrum bands. In case of any reduction in reserve price of 900/1800 MHz price

the corresponding adjustment would be required to be maintained for 800 MHz reserve price so as to retain the relative value of these spectrum bands.

- (xi) **In view of the above the reserve prices for 1800 MHz spectrum band already discovered cannot be discarded to be decided afresh.**
- (xii) **It may also be noted that price of 800 MHz spectrum band can not be based on 3G spectrum auction as 800 MHz spectrum band is used for 2G CDMA services and it is not complimentary to 2100 MHz spectrum band. 900/1800/2100 MHz bands are complimentary and can be interchangeably used but not the 800 MHz band which is used for CDMA deployment. Further 800 MHz spectrum band has entirely different eco system compared to 2100 MHz spectrum band The CDMA service acceptance is poor compared to 2100/1800/900 MHz. The CDMA devices are expensive and choice is poor. There are also issues concerning international roaming on CDMA networks. Therefore valuation of 2100 MHz spectrum cannot be used to establish prices for 800 MHz spectrum band.**
- (xiii) **Relative value of 800/900/1800 MHz band would have to be maintained. In case of any reduction in the price of 1800 MHz spectrum band, the corresponding and proportionate adjustment in the price of 800 MHz spectrum band would also be required.**
- (xiv) **As CDMA is a dying technology, the operators may not be willing to acquire additional spectrum with a validity of 20 years. The validity of the 800 MHz auctioned spectrum may thus kindly be kept at 3, 5, 7, 10, 15 or 20 years or co-terminus with the validity of the existing spectrum.**

Q10 Should the value of spectrum for individual LSA be derived in a top-down manner starting with pan-India valuation or should valuation of spectrum for each LSA be done individually?

RCOM Comments

- (i) No, spectrum valuation for individual LSAs should not be derived in a top down manner.

(ii) The spectrum valuation depends on available market, buying power, geography, number of operators, technology deployed etc. Each circle differs significantly on these parameters and therefore reserve price should be decided circle-wise.

(iii) In view of the above Spectrum price for 18 circles is already available and should not be reworked and estimated using hypothetical econometric models. Any reduction of price in these circles would only help selected group of operators at the cost of government revenues.

Q11 Is indexation of 2001 prices of 1800 MHz spectrum an appropriate method for valuing spectrum in 2013? If yes, what is the indexation factor that should be used?

RCOM Comments

(i) Spectrum value for 1800 MHz spectrum band is already available with the Government as derived from November, 2012 auction. To determine spectrum value at this stage on the basis of 2001 prices will not be correct and cause huge loss to the Government. It will also open flood gate of demands from operators who secured spectrum by bidding in November, 2012 auction.

(ii) Any reserve price based on indexation on 2001 price will be improper at this stage as not only correct valuation is available in 18 circles but also other parameters like societal conditions, demography, affordability etc have changed since 2001. The changes from 2001 are with regard to the following parameters:

- The level of saturation in Dense Urban, Suburban markets and the demand from Rural are entirely different in 2013 compared to what it was in 2001.
- Capex and Opex levels for operators have changed
- The Tariff and ARPU levels now are considerably different from 2001.
- Cost of Finance is different
- TSPs are now required to have pan India rollout for matching coverage of incumbents to be able to compete in the market, therefore upfront investment by operators is entirely different today.
- Focus is more on higher levels of penetration in Hinterland India
- The 2001 auction was mainly for 2G voice service however now spectrum has been liberalized and operators have choice of any technology
- Number of operators in market has changed.

- (iii) In view of the above, the option to decide spectrum reserve price based on 2G auctions in 2001 should be completely ruled out.

Q12 Should the value of spectrum in the areas where spectrum was not sold in the latest auctions of November 2012 and March 2013 be estimated by correlating the sale prices achieved in similar LSAs with known relevant variables? Can multiple regression analysis be used for this purpose?

RCOM Comments

- (i) The most basic and classical assumption for any regression analysis is that the sample should be representative of the population for the inference prediction. The multivariate regression model is based on spectrum prices of 1800 MHz spectrum band across 18 LSAs. These observations cannot be used to project prices for Delhi and Mumbai as other 18 LSAs cannot be taken as proxy for Delhi and Mumbai.
- (ii) The variation in reserve price for Delhi and Mumbai and spectrum in any of the LSAs is so high it would not be correct to project spectrum valuation of these two metros based on achieved valuation for other LSAs. The basic assumption of sample being representative of population for multivariate regression analysis is not meeting in the regression model proposed by the Authority.
- (iii) The Authority would appreciate that for statistical estimations comparison should be of 'like for like' to the greatest extent possible by using price information from awards that are comparable in all relevant aspects. Since prices for Delhi and Mumbai cannot be compared with other LSAs, the proposed multivariate regression model would not be a good fit to estimate spectrum valuation in Delhi/Mumbai.
- (iv) It may also be noted that spectrum value for 800 MHz for Delhi and Karnataka is also available. The discovered price for 1.25 MHz block in 800 MHz for Delhi and Karnataka is Rs 450.49 crores and Rs 214.58 crores respectively. Against the discovered value for Delhi in 800 MHz, the Authority has given in para 3.51 of the consultation paper the estimated values per MHz values for 1800 MHz for Delhi ranging from Rs 166-224 crores and Rs 143-192 crores for Karnataka. Admittedly GSM spectrum has higher value compared to CDMA spectrum but the results based on multivariate models are just opposite. **Thus multivariate regression model used by the Authority are not statistically a good fit and would fail Persons Chi Square Test of Goodness of Fit for Delhi, Mumbai, karnataka circles.** Therefore, multivariate regression as proposed in the consultation paper is not credible for estimating spectrum value for 4 unsold LSAs.
- (v) In view of the above we do not support spectrum valuation to be based on multivariate regression model proposed in the consultation paper.

- (vi) Spectrum value has already been established for 18 LSAs. For 2 unsold LSA i.e Delhi and Karnataka, reference value is already available for 800 MHz spectrum. Mumbai is commercial capital of the country and historically its spectrum valuation is always higher to Delhi valuation. Therefore, price determined in Delhi for 800 MHz would also be relevant for Mumbai. Admittedly 1800 MHz spectrum value has to be higher than 800 MHz spectrum price for Delhi and Karnataka. Spectrum value for Rajasthan circle can be derived from the price discovered for a comparable circle like Madhya Pradesh . Per capita GDP of Rajasthan is RS. 52735 as compared to Rs. 37994 for M P circle. Services GDP of Rajasthan RS. 166418 Million as compared to Rs. 146154 million for Madhya Pradesh.

Q13 Should the value of spectrum be assessed on the basis of producer surplus on account of additional spectrum? Please support your response with justification. If you are in favour of this method, please furnish the calculation and relevant data along with results.

&

Q14 Should the value of spectrum in the 1800 MHz band be derived by estimating a production function on the assumption that spectrum and BTS are substitutable resources? Please support your response with justification. If you are in favour of this method, please furnish the calculation and relevant data along with results.

RCOM Comments

- (i) TRAI had commissioned study by an expert committee consisting of eminent scientists and economists in 2011 to estimate value of spectrum in 1800 MHz Band. Although models such as Production Surplus and Production functions were available even at that point of time but the expert committee considered that spectrum valuation should be based on technical as well as commercial considerations. **While recommending the reserve price of spectrum as late as in April 2012 , TRAI did not discuss these models at all , surely the Authority was aware that these models are not relevant.**
- (ii) The ‘Producer Surplus’ model and ‘Production Function’ models are based on technical value of the spectrum i.e. spectrum value is based on network related cost savings that can arise from access to spectrum for additional capacity and/or coverage purposes.

- (iii) Technical value alone is not sufficient to estimate the spectrum valuation. The commercial value is **equally important if not more for estimating the spectrum valuation. The spectrum valuation should take into account the revenue gain that would arise from having access to spectrum and the likely revenue loss in not servicing the existing subscriber base in case of non award of spectrum . It may be noted that relative value of spectrum for established old GSM operators is different compared new operator as incumbents have established network, good share of market, higher ARPUs, better EBITDA margins etc. Thus advantages for an incumbent operator must be considered while deciding the spectrum value.**
- (iv) **Typically** commercial value could arise in several ways: average revenue earned from customer, number of customers, changes in spending of customers by consuming new services or higher usage, greater retention of customers i.e. lower customer churn rates etc. Commercial value of harmonized spectrum bands with developed eco system have much higher value compared to unharmonised bands or bands with not fully developed eco system. The differing commercial value of CDMA spectrum in 800 MHz and GSM spectrum in 900 MHz is one such example.
- (v) The incremental value of spectrum in terms of capacity enhancement would not give correct valuation. The ability of TSP to encash on additional capacity by offering better quality of service, new service etc is also important. Therefore spectrum valuation should be calculated on the basis of free cash flows over a long period of time.
- (vi) The test of good fit can only be established by comparing 1800 MHz spectrum price for Delhi with 800 MHz price for Delhi. Admittedly 1800 MHz spectrum price is higher than 800 MHz spectrum and ‘Producer Surplus’ model and ‘Production Function’ models should establish the same.
- (vii) **As revenue earning capacity or commercial value of the spectrum especially for established operator has totally been ignored in ‘Produce Surplus’ model and ‘Production Function’ model, we do not support spectrum valuations on these models. The value of spectrum should also take into account the likely loss to the operator in the absence of such spectrum.**

Q15 Apart from the approaches discussed in the foregoing section, is there any alternate approach for valuation of spectrum that you would suggest? Please support your answer with detailed data and methodology.

RCOM Comments

- (i) The spectrum valuation model should be robust that takes into account technical as well as commercial value of the spectrum. The spectrum value should be assessed by calculating the change in free cash flow generated by the business as a result of having access to the spectrum, on a net present basis over the period of the licence/spectrum validity.
- (ii) The model spectrum valuation should takes into account technology advancement and related cost benefits as well as commercial benefits like teledensity, revenue accruing from launch of new services etc
- (iii) RCOM is of view that as spectrum valuation is already available for 18 LSAs, there may not be any requirement for any further valuation.**
- (iv) Spectrum price for 800 MHz spectrum is available for Delhi and Karnataka. Admittedly 1800 MHz price is higher than 800 MHz spectrum price and therefore reserve prices for 4 circles for 1800 MHz spectrum band should be based on this cardinal principle.**

Q16 Should the premium to be paid for the 900 MHz and liberalised 800 MHz spectrum be based on the additional CAPEX and OPEX that would be incurred on a shift from these bands to the 1800 MHz band?

RCOM Comments

- (i) 900 MHz spectrum has Special characteristics cannot be matched by any other spectrum band and thus high valuation. 800 MHz spectrum band used in India and most parts of the world is different and as such the availability of echo-system has to be taken into account .800 MHz spectrum in Europe is the digital dividend spectrum i.e. 700 MHz band and is thus not the same as we have in India.
- (ii) 900MHz spectrum has certain characteristics that cannot effectively be substituted by any other spectrum band. The Authority in its recommendations dated 23.4.2012 had recommended reserve price for 900 MHz to be two times 800 MHz spectrum band in its recommendation of 23rd April, 2012. Authority's finds in these recommendations are given below:
 - **Para 3.87** The number of Base Station required for coverage for the same area is approximately 2.1 times less in 900 MHz as compared to 2100 MHz.

- **Para 3.87** : Relative Capex required for Network infrastructure investment in 2100 MHz spectrum band is approximately 2 times more as compared to sub-1 GHz band.
 - **Para 3.88**: Vilicom in its report has suggested that deployment cost of UMTS 900 Network is 65.6% of the cost of deploying a UMTS 2100 Network.
 - **Para 3.88** : Ovum in its report to GSMA has found that cumulative Capex cost over 5 years period for UMTS 900 operator is around 60% that of UMTS 2.1 GHz operator.
 - **Para 3.88** : Dot-Econ has mentioned that based on the auction data and technical studies, relative value of 1800 MHz and sub-1 GHz should range between 45% to 60%.
 - **Para 2.46** Cell area in respect of 900 MHz is about 2269 Square Kilometers while in respect of 1800 MHz it could be only 618 Kilometers. Thus, 1800 MHz spectrum requires about 4 times the number of BTSs in 900 MHz.
 - Characteristics of 1800 MHz and 2100 MHz are almost identical.
- (iii) Government of Australia has recently issued a direction that the reserve price for 800 MHz spectrum (825-845 / 870 – 890 used for GSM), 1800 MHz spectrum (1710-1785 / 1805 – 1880 MHz) and 2GHz (1920-1980 / 2110-2170 MHz) for the purpose of the renewal of GSM licenses in 2013 is as follows and it may be noted that GSM spectrum valuation in 800 MHz band, which is almost same as 900 MHz band in India is more than five times the price of 1800 MHz spectrum:

Spectrum Band	Cost of spectrum in \$ / MHz / Population
800 MHz (For GSM)	1.23
1800 MHz	0.23
2GH	0.625

- (iv) The Authority in its recommendations on „ “Spectrum Management and Licensing Framework” dated 11th May 2010 had examined the issue of allocating 900 MHz bands through auction. The Authority recommended that the valuation of spectrum in the 900 MHz band be fixed at 1.5 times that of the 1800 MHz band. However, EGoM and cabinet decided to have reserve

price for 900 MHz spectrum twice the reserve price/discovered price for the 1800 MHz band

- (v) The lower frequency range of 900 MHz spectrum has coverage advantage which means fewer base stations needed to be deployed to cover rural areas and provide mobile broadband services in densely populated areas, both outdoors and within buildings. The advantage of deploying 3G systems in 900 MHz spectrum band in dense areas is much higher compared to 2G systems. This is due to the difference in the way 2G and 3G technologies use spectrum. In 2G networks the advantage of 900 MHz frequency is limited as in densely populated areas there is still need to build a large number of sites to provide sufficient capacity. However in 3G networks, the coverage of the network, the number of users which can be supported and the data rates which can be offered are directly linked to the loss which a signal undergoes in reaching the users. As loss is substantially lower in 900 MHz, 3G operators in densely populated areas realise higher benefit.
- (vi) As the CAPEX and OPEX savings in 900 MHz spectrum band are tremendous over 1800 MHz spectrum band and there is additional capacity benefit in 900 MHz, its valuation should be maintained at twice the 1800 MHz spectrum levels. COAI members have been themselves declaring that they will be losing about Rs. 115000 crores on account of refarming of 900 MHz spectrum and migrating to 1800 MHz .This shows the intrinsic value of 900 MHz spectrum as compared to 1800 MHz.**

800 MHz valuation is much lower than 900 MHz spectrum band

- (vii) At the outset it is submitted that price for 800 MHz spectrum band and 900 MHz spectrum band in India are not comparable. In terms of propagation characteristics, 800MHz and 900MHz may be similar but these spectrum bands have entirely different technology deployment in India and thus are used entirely for different purposes. 800MHz and 900 MHz spectrum can not be considered to have same valuation as these are not complementary or substitutable for each other. Systems deployed in 800 MHz spectrum band cannot be deployed in 1800 MHz spectrum band and therefore the issue of estimating premium to be paid for 800 MHz spectrum cannot be based on the additional CAPEX and OPEX that would be incurred on a shift from these bands to the 1800 MHz band is not applicable.
- (viii) The 800 MHz spectrum valuation is much lower compared to 900 MHz spectrum band as 900MHz band is available in the blocks of 5 MHz and can be used for any new technologies. However, in 800 MHz spectrum band 5 MHz block is not available and thus spectrum in this band can only be used for CDMA technology. As 5 MHz spectrum is not available for liberalized use,

the issue raised in the question that premium to be paid for the liberalised 800 MHz spectrum be based on the additional CAPEX and OPEX that would be incurred on a shift from these bands to the 1800 MHz band is also not relevant.

(ix) Spectrum valuation of CDMA 800 MHz spectrum band is much lower compared to GSM 900 MHz spectrum band as eco system for CDMA and GSM technologies are different. CDMA 800 MHz spectrum band suffers in terms of valuation for the following reasons:

- The Eco-system for CDMA services is deteriorating and number of customers worldwide on CDMA platform is less than 10% of the total mobile base. Rest 90% of the mobile subscribers are on GSM technology.
- CDMA equipment and devices have much higher prices compared to GSM due to economies of scale advantage heavily in favour of GSM
- Devices supporting CDMA are limited leading to higher cost and poor acceptability.
- CDMA is a dying technology and has been recognized even by our Minister of Communication (statement dated 16th. Nov. 2012 refers).
- The ARPU of CDMA subscribers is almost 20% less than the ARPU of GSM subscribers.
- MoUs per subscriber for CDMA are about 225 minutes compared to 342 minutes for the GSM subscribers.
- There are issues concerning international roaming for the CDMA subscribers.
- 900 MHz has growth path in 1800 MHz and can be interchangeably used. 900 MHz spectrum band can be liberalized for deployment of new technologies but same growth path is not available for CDMA in 800 MHz spectrum band.

Due to above mentioned reasons, there were not many takers in auction held in March, 2013 for 800 MHz. Even with the Rs.9100 crs reserve price, there are bids only in 8 circles. SSSL was only bidder. Although SSSL's licenses were cancelled but did not bid in other circles due to very high reserve price. Even TATA has surrendered some CDMA spectrum because of the high price of CDMA spectrum.

(x) In view of the typical characteristics of 800 MHz spectrum band its pan India reserve price is only Rs 9100 crores against Rs 11,893 crs for 1800 MHz spectrum band and Rs 23,786 crs for 900 MHz spectrum band. Thus, TRAI should reduce the reserve price of 800 MHz spectrum to around 20% of the present price.

- (xi) The spectrum in 800 MHz CDMA band is less than 5 MHz in many circles. The CDMA operators, in the absence of availability of sufficient spectrum will have to continue in the un-liberalized form for 2G services. With the poor eco-system as mentioned in the preceding para for 800 MHz spectrum band, the long term sustainability of CDMA based operations is really doubtful. As CDMA spectrum is not sufficient for liberalized use the validity of the 800 MHz auctioned spectrum may kindly be kept at 3, 5, 7, 10, 15 or 20 years or co-terminus with the validity of the existing spectrum.
- (xii) Therefore, premium to be paid for liberalized 800 MHz spectrum is not relevant and cannot be based on the additional CAPEX and OPEX that would be incurred on a shift from these bands to the 1800 MHz band.**
- (xiii) As CDMA spectrum is not sufficient and cannot have liberalized use, the validity of the 800 MHz auctioned spectrum may kindly be kept at 5, 7, 10, 15 or 20 years or co-terminus with the validity of the existing spectrum.**

Conclusions

- (xiv) Due to special characteristics of 900 MHz spectrum band the valuation of 2 times the 1800 MHz spectrum band is correct. The premium for 900 MHz has to be based on CAPEX and OPEX savings as well as capacity enhancement in 900 MHz for 3G systems over 1800 MHz spectrum band.
- (xv) The current ratio of reserve price of 800, 900 and 1800 MHz spectrum represents the relative value of these spectrum bands. In case of any reduction in reserve price of 900/1800 MHz price, corresponding adjustment in reserve price for 800 MHz band would also have to be maintained in the 800 MHz band.
- (xvi) The valuation of liberalized 800 MHz spectrum band is much lower than GSM bands due lower commercial value. Therefore, premium for liberalized 800 MHz spectrum cannot be based on the additional CAPEX and OPEX that would be incurred on a shift from these bands to the 1800 MHz band. The correct valuation of 800 MHz band is only around 20% of the 1800 MHz spectrum band

Q17 Should the valuation of spectrum and fixing of reserve price in the current exercise be restricted to the unsold LSAs in the 1800 MHz band, or should it apply to all LSAs?

RCOM Comments

- (i) The price of 1800 MHz spectrum band has already been discovered in 18 circles i.e all circles except Delhi, Mumbai, Karnataka and Rajasthan. Any downward change in the price already discovered in these circles without any valid basis will lead to unwarranted loss to the government revenues. Any attempt to reduce prices in these 18 circles would lead to demands of refund of spectrum fees from the successful bidders of spectrum in November, 2012 auction.
- (ii) Any change in 1800 MHz spectrum reserve price in 18 circles at this stage would vitiate the sanctity of auction process which has taken place only last year. Any reduction in spectrum valuation would tantamount to financial gains for bidders of next auction, who chose to abstain from auctions held in November, 2012 and March, 2013.
- (iii) It may also be noted that 1800 MHz spectrum in 18 circles where price has already been discovered were not put to auction in March, 2013. Therefore there is no basis to assume that the prices in these circles are high.**
- (iv) Thus valuation of spectrum has already been established for 1800 MHz spectrum band in 18 circles and reserve price for these circles should be fixed at last successful bid price.**
- (v) Spectrum price for 800 MHz spectrum is available for Delhi and Karnataka. Admittedly 1800 MHz price is higher than 800 MHz spectrum price and therefore reserve prices for 4 circles should be based on this cardinal principle.**
- (vi) The reserve price for 800 MHz spectrum band was assumed to be 65% of the 1800 MHz band spectrum price. On the same basis price of 1800 MHz spectrum price for Delhi and Karnataka can be derived from the spectrum price for 800 MHz spectrum band.**

5 MHz spectrum price for Delhi in 800 MHz	= Rs 1802 crs
Spectrum value for 1800 MHz for Delhi using 800 MHz price	= <u>Rs 1802 crs</u>
	0.65
	=Rs2772 crs

Like wise 5 MHz spectrum price for Karnataka in 1800 MHz	= <u>Rs 858 crores</u>
	0.65
	= Rs 1320 crores

(vii) Since Mumbai is commercially more important than Delhi, the price of spectrum in Mumbai, if not higher than Delhi should match it i.e Rs 2772 crores for 5 MHz spectrum. No efforts may kindly be made to subsidise the spectrum prices for Metros at the cost of subscribers in B & C circles, where the teledensity continuous to be far lower than in Metros. If at all, any reduction in GSM spectrum price is required at this stage, it should be in respect of B & C circles.

Q18

- a) Should annual spectrum usage charges be a percentage of AGR or is there a need to adopt some other method for levying spectrum usage charges? If another method is suggested, all details may be furnished.
- b) In case annual spectrum usage charges are levied as a percentage of AGR, should annual spectrum charges escalate with the amount of spectrum holding, as at present, or should a fixed percentage of AGR be applicable?
- c) If your response favours a flat percentage of AGR, what should that percentage be?

RCOM Comments

- (i) RCOM strongly disagrees with the TRAI analysis of flat Spectrum Usage Charge (SUC). The policy of escalating SUC for higher quantum of allocated spectrum has scientific and economic rationale. The relationship between the incremental amount of spectrum and the capacity of the network to carry additional traffic is non-linear i.e. the traffic increases in a greater proportion than the proportion of increase in spectrum. With higher amount of spectrum, the CAPEX and OPEX

saving per MHz spectrum is far higher and therefore, the SUC rate would have to be linked to the spectrum holding.

- (ii) The Authority had studied in its recommendation dated 10.5.2010 the capacity enhancement in case of increase of spectrum from 4.4 MHz to 6.2 MHz, 6.2 MHz to 8 MHz and 8 MHz to 10 MHz. As per the Authority's own analysis(Annexure XVII of recommendations) , capacity enhancement with spectrum is non-linear and therefore there is no basis for flat SUC. The capacity enhancement which an operator gets with increase in spectrum is given below:

	4.4 MHz	6.2 MHz	8 MHz	10 MHz
Capacity(Erlg)	17.22	39.34	61.28	96.95
Capacity per MHz (Erlg)	3.91	6.34	7.66	9.69

- (iii) The policy of escalating Spectrum Usage Charge (SUC) for higher quantum of allocated spectrum was adopted to discourage substitution of physical infrastructure by spectrum. The escalating SUC discourages spectrum hoarding and promotes efficient utilization of spectrum which is a scarce resource.
- (iv) There is no logic to impose a lower flat SUC irrespective of spectrum holding. Uniform spectrum fee would only help incumbent operators as only those operators hold higher quantum of spectrum. The proposal of flat SUC will create a non-level playing field between new and incumbent operators providing enormous regulatory benefit for operators holding larger chunks of spectrum. The estimated benefit likely to accrue to select group of main GSM operators at their current spectrum holding over validity of spectrum i.e 20 years would be around Rs 54, 000 crores.
- (v) It is estimated that at current spectrum holding if flat SUC is applied at 3% and annual AGR growth of 5% is assumed then government will face a loss of Rs 54,000 crores over the validity of spectrum. This subsidy being proposed for this select group of operators would be a huge benefit of regulatory cost savings for the incumbent operators for which there is absolutely no scientific or economic rationale.
- (vi) The TRAI in its recommendations on 'Auction of Spectrum' of 23rd April, 2012, had recommended flat rate of 1% (later revised to 3%) of AGR. The Telecom Commission ,EGOM and Cabinet had considered TRAI

recommendations of flat SUC and did not accept. SUC is already being paid at escalating for spectrum allocated through Auction. In view of it there seems to be reasons for opening this issue again. SUC on escalating basis was also part of previous two auctions. At this stage it may not be correct to move to flat SUC rate as that would amount to giving benefit to winning bidders in previous auctions as they had factored graded SUC in their bids. Any move towards a flat SUC would be clearly seen as post auction benefits to selected operators at the cost of government revenues and may lead to legal challenges as 127.5 MHz of GSM spectrum and 30 MHz of CDMA spectrum has already been acquired by 5 operators in the auctions held in November, 2012 and March, 2013.

- (vii) The more relevant issue pertaining to SUC is the AGR definition as there are number of issues concerning inclusion of certain revenue/income streams in the AGR definition which are not from telecom activities. It is important that statement of revenue & license fee is corrected to take care of these concerns. The AGR should include revenues accruing to the licensee from the provision of licensed activities under the license and Pass through revenues should comprise of all revenues paid out to the other licensed activities under the license. The TRAI is requested that review of AGR definition should be immediately initiated so the SUC could be rationalized.

- (viii) **In view of the above, it is suggested that successful spectrum bidder should be asked to pay spectrum usage charge at prevailing escalating rate depending on the quantum of spectrum held.**

- (ix) **Authority is requested to urgently review AGR definition to include revenue from telecom activities only and to avoid any double levy of License fee/SUC on any revenue.**

Q19 what should be the ratio adopted between the reserve price for the auction and the valuation of the spectrum?

RCOM Comments

- (i) The reserve price has been rightly referred to as the minimum amount that the owner of an item will accept as the winning bid. Since the price of 1800 MHz has been recently arrived at in the 18 circles out of 22 circles, the

reserve price in these circles has to be the last winning price of Nov. 2012 i.e. 100 % of the value of the spectrum.

- (ii) In case the Govt. decides to have a lower reserve price and the auction closes on the reserve price due to the coordinated approach of the operators then it will reflect very badly on the design of auction process. Thus the reserve price of remaining 4 circles will have also to be 100 % of the estimated value of spectrum.
- (iii) Reduction in the reserve price in the next auction will send a signal that the earlier reserve price was set at 80% against the international average of 50 % so that the operators whose licenses have been cancelled are kept away from auction and the incumbent operators do not face much competition in subsequent auctions. The goal of the incumbent operators has been achieved to certain extent as against the cancellation of 122 licenses , only 27 licenses have been awarded and the number of operators has come down in all the service areas. Having achieved this goal, lowering of reserve price now, would be seen as going with the operators whose licenses are now due for renewal.
- (iv) The international data of ratio of reserve price to the spectrum value published by the Authority in this consultation paper was known to the Authority even in 2012 as all the data relate to the period 2007 -2011. However, the Authority had chosen to keep the ratio of reserve price to the market value at higher level in India as the availability of spectrum in the country is limited and it has a higher value.
- (v) Keeping the above aspects in view and to have a level playing field, **the ratio of reserve price to the value of spectrum should be set at 100%**
- (vi) Authority's attention is drawn to recent media reports where Comptroller and Auditor General is learnt to have blamed cartelisation by telecom players behind the failure of recent spectrum auction and pointed finger at the conduct of large incumbent operators. In case coordinated bidding is suspected there is tremendous risk that the auction might not be competitive and may lead to the distorted auction outcomes. Low reserve price would result in final auction prices that are significantly lower than market value.
- (vii) To stop coordinated bidding and inefficient auction outcomes in terms of lower spectrum valuation reserve prices should be decided close(r) to market

prices. This would also reduce the potential for large windfall gains for successful bidders and revenue loss for the government. Thus reserve prices should be set with reference to the market value of spectrum.

(viii) To maintain sanctity of the past auction, the reserve price should not be reduced for 18 LSAs where spectrum valuation was discovered last year. As reserve price in 18 LSAs has already been achieved, the reserve price should be at the market value. To maintain consistency same ratio should also be applied in other 4 unsold circles i.e reserve price should be at the estimated market value of spectrum.

(ix) In light of the above RCOM suggests to adopt 100% ratio between the reserve price for the auction and the valuation of the spectrum.