

VTL/Reg/TRAI/1308/3617
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Mahanagar Door Sanchar Bhawan
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New Delhi - 110002.

Subject: Response to Consultation Paper on "Valuation and Reserve Price of Spectrum"
Re: Authority's Consultation Paper No. 06/2013 dated July 23, 2013

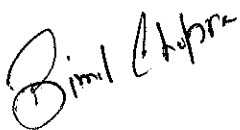
Dear Sir,

We would like to take this opportunity to be thankful for Authority's hard work and efforts in bringing out a comprehensive & balanced consultation paper addressing major critical issues like re-farming, adoption of E GSM Band, Spectrum Trading, methodology to be adopted for deriving the value of spectrum, etc.

We are pleased to attach our comments on the issues raised under the said Consultation Paper and hope that the Authority will consider our response favourably

Thanking you,

Yours sincerely,
for **Videocon Telecommunications Limited**



Bimal Chopra
DGM - Regulatory

Enclosure: As Stated Above

Preamble

Prior providing our inputs on the Consultation Paper we would like to appreciate the Authority's hard work and approach for initiating this public consultative exercise through this balanced consultation paper addressing major critical issues involved in allocation of Radio Frequency spectrum a scarce national resource.

We firmly believe that the main purpose of this exercise of Spectrum Management is not based on the criterion to derive the revenue for the exchequer but to allocate the spectrum in the best possible way to ensure that overall public should be benefited by the use of this national scarce resource.

India in last decade has recognized that RF Spectrum is a complex natural resource, having multiple dimensions i.e. frequency, time, space, etc. Its regulation, including pricing, is an involved issue. Spectrum being a limited and scarce resource has to be used optimally by all users - government or public, commercial or captive.

Hon'ble Minister of Communications & IT Shri Kapil Sibal has rightly recognized and endorsed this in his Press Statement dated 07-Jan-2011 stating inter alia that "*... .. Government policy is formulated with a view to maximize public welfare, and not merely to maximize Government revenues. The pricing of different natural resources is often done in a manner that meets this objective... ..*

... .. It is in this background that successive Governments have chosen to allocate telecom licences and spectrum on a basis other than revenue maximization. It should also be noted that with the enactment of the Telecom Regulatory Authority of India Act, 1997 the recommendations of the independent regulator are a very high important factor in deciding these matters. The TRAI has consistently taken the view that revenue generation should not be a major determinant of the policy governing the telecom sector and this is also the view taken when the 10th Plan was finalized in 2002... .. "

It is also pertinent to mention that spread of mobile communications has lead to economic upliftment of nation by better education quality, health, safety and increased opportunities in almost every sphere of life. The socio-economic impact of mobile communication has been documented and commented upon in several studies conducted across the globe.

National Telecom Policy 2012 also envisages that development of Telecom sector is one of the vital ingredients for overall economic growth of the country. This can be supported by various Government welfare projects such as Job Application System (OJAS) in Gujarat, Unemployment Allowance in Haryana, Mother Child Tracking System in Bihar, Pregnancy and Infant Cohort

Monitoring System in Tamil Nadu, Blood Group Wise Donor Search in Tripura, NOFN (National Optic Fibre Network) which plans to connect all the 2,50,000 Gram Panchayats in the country, etc. Despite India being recognized as one of the potential telecom market in global arena Indian telecom operators hold much smaller quantum of spectrum as compared to operators operating in other countries across the world. To ensure overall spectral while defining spectrum management principles the available technologies and techniques should be studied and policies should be carved accordingly to minimize intrusion on the environment.

Planning Commission of India has rightly recognized that from a purely economic point of view Government of India should proceed with an auction of spectrum in order to make full use of this scare resource. It has also been envisaged that third failed auction will have very adverse impact on investment climate and credibility of Indian Telecommunication policy. It is therefore desirable that the valuation of spectrum be acutely derived to ensure successful auction of the available spectrum. From the economics points of view a auction can be termed as successful auction only when (1) All Spectrum put up for auction is sold and (2) The Auction "Sale Price" is above the Auction "Reserve Price".

Our response to issues under consideration in this consultation paper is as follows:

Q.1. What method should be adopted for refarming of the 900 MHz band so that the TSPs whose licences 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 licences expiring afterwards (LSAs other than metros)?

R.1&2 Refarming of spectrum as an issue has been debated time and time again across the entire spectrum of stakeholders and after due consideration same has been recognised as one of the major policy inactivates in NTP 2012. With emergence of new technologies, refarming of premium spectrum like 900 MHz has become mandatory to ensure that India should be at par on the technological front in International arena and that the scare resource of spectrum is used in a most efficient manner like assigning it only for spectrally efficient technology like LTE.

We firmly believe that for optimal spectral efficiency and derivation of fair market price entire spectrum in 900 MHz should be refarmed without making any reservation for the licensees whose licenses are getting expired in 2014 or onwards. The licensees whose licences expire in 2014 should be assigned spectrum in 1800 MHz only. The 900 MHz spectrum should be put to auction only after it is vacated by the incumbents to prevent monopolising auction by the 900 MHz incumbents in view of their ability to bid higher due to the valuation of the existing 900 MHz asset. Any attempt to auction 900 MHz spectrum

before vacation by the incumbents would only lead to destruction of level playing field in auction and would let incumbents force the new players set the winning price for the incumbents.

With Introduction of Mobile Number Portability in India, the concerns related to "Continuity of services" are addressed in totality. The glimpse of same was observed when 2008 quashed licensees stopped their operations in service areas where they were unable to succeed in obtaining spectrum in recently concluded Spectrum Auction of November 2012 & March 2013 and the customer base was successfully and seamlessly ported to other service providers.

Q.3. Is any restriction required to be imposed on the eligibility for participation in the proposed auction?

R.3 There should be no auction of 900 MHz spectrum before its vacation and therefore no one would be eligible to bid for the same at this point in time. Eligibility for Participation in the proposed auction should be same as that of the conditions needs to satisfy by the "Prospective Bidders" for participation in recently concluded auctions with modifications required to accommodate the new policy initiatives like the issue of UL(AS)/UL, 100% FDI in telecom sector etc. The proposed auction should be restricted only to 1800 MHz spectrum.

Q.4. 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?

R.4 We welcome the Authority's view point of adoption of E-GSM band based on the fact that CDMA subscriptions have declined and operators holding CDMA spectrum have shown interest in surrendering of excess spectrum held by them. Correlations of this issue with this consultation process of TRAI on "Valuation and Reserve Price of Spectrum" will definitely open doors for successful and fruitful auction of spectrum in 900 MHz band at an appropriate time.

Diminishing interest of operators in CDMA band is clearly evident from the recently concluded auction wherein after 50% reduction of the reserve price only one operator participated and 30% of the overall offered spectrum was sold.

Considering the importance of 900 MHz for leveraging the spectral efficiency of the new technologies, we are of the opinion that E-GSM band should be refarmed to make the 900MHz band 35+35 MHz wide at the earliest and auctioned together at an appropriate time subsequent to the current proposed auction.

The requirement of spectrum in 800 MHz for CDMA and other operations may be determined in alignment with the requirement of implementing E-GSM band for higher spectral efficient systems. Various techno – commercial issues like validity of licenses, Investment made by operators in technology needs to be addressed appropriately for migration of existing CDMA operators.

Q.5. Should roll out obligations for new/existing/renewal/quashed licenses be different? Please give justification in support of your answer.

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Q.6. 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?

R.5&6. Since the auction is designed to determine the market value of the spectrum to be paid by the successful bidder, there should be no explicit roll-out obligation associated with the use of spectrum. However, if the government desires such successful bidders to provide service in designated areas, then they should be appropriately incentivised by suitable methods like releasing funds from USOF, reduction in SUC etc.

As a measure to prevent hoarding of the spectrum and to protect the genuine inflow of revenue to the Government, suitable methods like prescribing presumptive AGR may be included as the bid condition.

Q.7. What should be the framework for conversion of existing spectrum holdings into liberalised spectrum?

R.7 The price of "liberalised" spectrum was determined through market mechanism and is way higher than the price paid by the operators who received spectrum through administrative assignment. In order to establish a level playing field in case of "liberalised" spectrum, the operators holding administratively assigned spectrum should pay the difference in price between the market determined price and that paid for administrative assignment.

Q.8. Is it right time to permit spectrum trading in India? If yes, what should be the legal, regulatory and technical framework required for trading?

R.8 Spectrum trading is a progressive step towards efficient utilisation and economic exploitation of the spectrum. NTP 2012 has recognised spectrum trading as one of the essential catalyst to move towards optimum utilisation of spectrum.

Spectrum Trading should be permitted through proper legislative notifications. This involves review of existing legal, regulatory and technical binding, and therefore, request Authority to float a separate consultation paper on spectrum trading.

Q.9. 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?

R.9 Auction of 3G spectrum was concluded in 2010 with a main objective to obtain a market determined price of 3G spectrum and promote 3G rollout.

It is pertinent to mention that spectrum valuation is related to the economic growth of the country which is dependent on various external (like foreign investments, technological developments, etc) and internal (like GDP, inflation, etc). The economic scenario of India at the time of 3G auction in 2010 was entirely different from the one prevailing now. The market has undergone severe changes over the last three years and it is essential to have a fresh valuation of spectrum in sync with current scale of economics.

Thus, it is not appropriate to use the price obtained in the auction of 3G spectrum in 2010 as the basis for valuation of spectrum in 2013.

Q.10. 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?

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Q.11. 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?

R.10&11 In recent past also various economic standards have been followed to assess the spectrum value. Every approach is based on certain assumptions due to which in our opinion none of the standard is robust in itself.

We would like to draw the Authority's attention to 4th Cellular auction in 2001 in which operators were free to enter the Bid amount for the service areas put up for sale basis their business models. The auction was termed as "Successful Auction" by way of which PAN India price of **Rs. 1650** was determined. We are of the firm opinion and want to reiterate our earlier stand that rather deriving cost of spectrum basis any assumptions, the cost determined in 2001 auction is the only value which should be considered as "Base Value" of spectrum (**without any indexation**) for purpose of proposed auction and allow the market forces determine the actual value of spectrum.

However in case Authority still feels to assess the value of spectrum on economic standards then we are of the opinion that bottom-up approach will yield more realistic values for the likely price of the spectrum because in bottom-up approach the valuation will be derived after taking into consideration socio economic factors like population size, population growth rate, % of rural population, per capita income, topography, etc. In addition while evaluating the value of spectrum basis bottom up approach factors like infrastructure

availability, state government policies; etc should also be taken into consideration for deriving value of spectrum, hence, valuation of spectrum for each LSA should be done individually.

As specified above, valuation of spectrum takes into consideration various factors using realistic approach, thus we are of the opinion that indexation of 2001 prices cannot be adopted as a method for deriving value of spectrum in 2013.

Q.12. 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?

R.12. The service area where spectrum remains unsold in the last auction in November 2012 & March 2013 cannot be correlated with the sale price in similar LSAs because of the simple reason that every LSA bears unique characteristics in terms of demography, population, per capita income, etc. Thus we are of the view that the sale price of one LSA cannot be correlated with another as there are no proxies with commonality.

Q.13. 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.

R.13. *Producer surplus or producers' surplus is the amount that producers benefit by selling at a market price that is higher than the least that they would be willing to sell for.* The producer surplus approach is based on the inverse relationship between the quantum of spectrum available with an operator and the costs incurred in serving a given level of subscribers (though subject to a minimum threshold of spectrum and network build). This approach can be used to determine the engineering value of sale of incremental spectrum which results in saving marginal cost of network.

The concept of *Producer surplus* can be advantageously employed only when the use of additional spectrum brings in significant improvement in capacity and trunking efficiency. Again the trunking efficiency varies with the quantum of initial and subsequent chunks of spectrum. With the current licensing framework, the benefits of Producer Surplus get negated as the assignment of spectrum is generalized across the LSA whereas the requirement would be discreet. This approach is fruitful in scenario where allocation of additional spectrum is made to specific geographical areas and at different spectrum value depending upon the requirement. Thus in our opinion the producer surplus approach is not relevant for this auction.

Q.14. 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.

- R.14 The relationship between spectrum and BTS as substitutable resources is not linear and depends heavily on the quantum of spectrum and the cost of BTS and associated infrastructure for different configurations. Production function is customarily assumed to specify the *maximum* output obtainable from a given set of inputs. The production function, therefore, describes a boundary or frontier representing the limit of output obtainable from each feasible combination of input. The value of spectrum in 1800 MHz cannot be derived by a production function on the assumption that spectrum and BTS are substitutable resources (inputs) and mobile traffic is the output, which is dependent on the following conditions:
- a. Full substitutability of the two assumptions inputs
 - b. Dynamic adjustment of spectrum holding at market prices
 - c. Output elasticity of the factor inputs are constant for a particular technology

which is not admissible in today's Indian telecom environment.

It is also pertinent to mention that basis RF planning and designing the number of BTSs in an area can't be increased beyond a certain limit due to technological limitations and developments, therefore, value of spectrum in the 1800 MHz band derived by estimating a production function on the assumption, is indefensible.

Q.15. 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.

- R.15 Discounted Profit (DP) is the most comprehensive approach which helps to calculate the maximum price an operator would be willing to pay for spectrum after factoring for all the costs and a targeted return.

This method takes into account the revenue potential and non-network costs of running a cellular business for arriving at the spectrum price thereby, providing a holistic view of the spectrum value.

Accounting Separation Reports submitted by the operators contains the relevant data which can be used to derive the average industry costs for all services across each LSA.

Alternatively, the approach and estimations underlying the BWA auction which is also liberalized for LTE deployment with Voice enabled would be a pragmatic approach. The cost of BWA spectrum would be 37.5% of the 3G spectrum price [Assuming that 20 MHz TDD would be equivalent of 10 MHz FDD]. Considering a factor of 1.1 for spectral

efficiency/propagation characteristics, the price would be 41.25%. This would lead to pan India spectrum value of about `6600 crores for 5 MHz.

Q.16. 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?

R.16 The refarming of 900 MHz spectrum should be dealt as a separate exercise as explained in our answer to Q1&2 delinking it from the proposed auction of 1800 MHz spectrum. The incumbents should be asked to shift to 1800 MHz spectrum rather than trying to derive the premium for the value of 900 MHz which would always be contentious.

Q.17. 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?

R.17 The valuation of spectrum for fixation of reserve price should be done for all the LSAs.

Q.18. 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?

R.18 The Spectrum Usage Charge (SUC) is the additional charges to be paid on revenue share basis, as prescribed separately from time to time.

Presently SUC varies between the ranges of 1% to 8% of the AGR depending upon the quantum of spectrum held by the licensee dependent upon the technologies opted by the licensee vis. BWA, GSM, 3G, CDMA, thus creating a non-level playing field.

Presumptive AGR has also been introduced for levy of SUC to avoid unnecessary loss to national exchequer due to hoarding of spectrum a national scarce resource.

Present slab wise methodology for levy of SUC is somewhat similar to the methodology adopted for levy of Income tax on the reasons related to benefits derived by the operator holding large chunk of spectrum.

We are of the opinion that SUC should be on percentage basis for liberalised Spectrum only to cover the spectrum administrative cost. We recommend a uniform SUC of 1% of AGR for all liberalised spectrum.

Q.19. What should be the ratio adopted between the reserve price for the auction and the valuation of the spectrum?

R.19 The mean and median of reserve price / final price ratio provided by Authority is across different bands varies from 41% to 59% which if considered in approximation arrives near to a optimum value of 50% of reserve price to final price ratio. Reference, International benchmarks provided by TRAI any ratio varying between 40% to 50% of reserve price 'viz-a-viz' spectrum value can be taken into consideration.