

**TRAI - Consultation Paper on Valuation and Reserve Price of Spectrum: Licences  
expiring in 2015-2016, 7<sup>th</sup> August 2013**

**Q.1. Please comment on the issue of making available additional spectrum in contiguous form (as discussed in para 2.5 and 2.13) in the 900 MHz and 1800 MHz band.**

**Q.2. Please comment whether only contiguous blocks of minimum 5 MHz spectrum should be put for auction.**

**Q.3. What should be the block size to auction the spectrum in (a) 900 MHz band and (b) 1800 MHz band?**

**Q.4. What should be the minimum quantum of spectrum in the 900 MHz and 1800 MHz band that (a) a new entrant and (b) an existing licensee should be required to bid for?**

**Q.5. Should the licensee whose licences are due for expiry in 2015 and 2016 be treated as an existing licensee or as a new entrant?**

*Response:*

- Due to the continued growth of GDP, rise in the socio-economic status and expected growth in the India telecom industry (especially the data services), the demand for spectrum would continue to be there. Thus, the Government may consider providing additional spectrum which is not yet available to Telecom Service Providers.
- The additional spectrum to such Licensed Service Areas (LSAs) (e.g. West Bengal where only 4.4 MHz is available) where spectrum is sparsely available, would help them cater to the growing demand for telecommunication services and also provide services via latest technology which require greater spectrum to operate.

***Contiguous Spectrum***

- Due to additional benefits of contiguous spectrum, TSPs would prefer contiguous spectrum over non-contiguous spectrum, and we are of the opinion that it would be desirable if it is the Government's endeavour too to provide the same to TSPs.
- In case the Government is unable to provide contiguous spectrum to TSPs, frequency reallocation (currently not permitted) could be allowed so that the TSPs are able to form contiguous spectrum and gain from resultant efficiencies

- We are also of the opinion that the Government could allow frequency re-allocation irrespective of the fact whether the concerned spectrum(s) have been liberalised or not. The Government could limit the usage of the reconfigured spectrum in line with the licensee and purpose which the license was given for.

### ***Spectrum Block Sizes***

- We are of the opinion that the block size could be kept to the minimum possible as each TSP may have varying requirement of spectrum in each LSA
- In the recent auctions concluded in February 2014 pertaining to 1800 MHz, 1 block was equivalent to 200 KHz and the minimum requirement for a new entrant into an LSA was 25 blocks equivalent to 5 MHz.
- The same block size (200 KHz) may be kept for the upcoming auctions as well for both 900MHz and 1800 MHz irrespective of the fact that it is a new or an existing TSP.
- The reason for the same is that each TSP may have varying requirement of spectrum and hence keeping a floor on blocks of spectrum may not be efficiently allocating spectrum to the TSPs.
- With market determined prices where the spectrum will be awarded to that entity which is willing to pay the maximum price for it, the classification of TSPs into new and existing licensee may be done away with as those TSPs who value it the most will bid for it.
- This may further strengthen the auctions as there would be no obligation on a TSP to purchase a requisite amount of spectrum and in the process of bidding there would be efficient allocation of this resource and discovery of latest market prices.

**Q6. Should the valuation exercise for 1800 MHz spectrum be undertaken afresh for all the 22 LSAs?**

**Q7. Should the prices revealed in the February 2014 auction for 1800 MHz spectrum auction be taken as the value of 1800 MHz spectrum for the forthcoming auction in the respective LSA? Would the response be different depending on whether the forthcoming auction is conducted within one year of completion of last round of auction of February 2014 or later?**

**Q8. If the prices revealed in the February 2014 auction for 1800 MHz spectrum are taken as the value of 1800 MHz for the forthcoming auction, would it be appropriate to index it for the time gap (even if this is less than one year) between the auction held in February 2014 and forthcoming auction? If yes, what rate should be adopted for the indexation?**

**Q9. What should be the criteria for defining a 'market clearing price'? Can the auction determined price be considered as market clearing price, when (i) the demand for spectrum is greater than the supply and when (ii) the demand is greater than or equal to the supply? Can the auction determined price be considered as the market discovered price?**

**Q10. Should the valuation of spectrum and determination of reserve price be done only for those LSAs where market clearing price was not achieved for 1800 MHz spectrum in February 2014 auction?**

**Q11. Should the auction determined price for LSAs where market clearing price was achieved in February 2014, be taken as equal to the value of spectrum?**

**Q12. Should the market determined price be taken as the value of spectrum in all LSAs?**

**Q13. Should the value of spectrum in the LSAs where market clearing price was not achieved be estimated by correlating the sale prices achieved in similar LSAs where market clearing price was achieved with known relevant variables (para 3.19)? If yes, please suggest which single variable is best suited for this purpose?**

**Q14. Can multiple regression analysis be gainfully employed for this purpose given the limited number of sample data points?**

**Q15. Should the value of spectrum in 1800 MHz band be assessed on the basis of producer surplus on account of additional spectrum?**

**Q16. Is there any need for a change/revision of any of the assumptions adopted by the Authority in producer surplus model in the Recommendations of September 2013? Justify with reasons.**

**Q17. Should the production function model based on the assumption that spectrum and BTS are substitutable resources be used as a valuation approach (as was done in the earlier valuation exercise)? Please support your response with justification/calculations/relevant data and results.**

**Q19: Should the values contained in the Report of 8th February 2011 for spectrum up to 6.2 MHz be incorporated after indexation in the calculation of the average value of the 1800 MHz spectrum in the current exercise?**

**Q20. Should the prices revealed in the February 2014 auction for 1800 MHz spectrum auction be used as one of the values of 1800 MHz spectrum?**

**Q21. Apart from the approaches discussed as above, is there any other approach for valuation of spectrum that you would suggest? Please support your answer with detailed data and methodology.**

**Q22. Would it be appropriate to value 1800 MHz spectrum as the simple mean of the values thrown up in all the approaches? If no, please suggest with justification that which single approach should be adopted to value 1800 MHz spectrum?**

**Q27. Should the reserve price of 1800 MHz spectrum in the forthcoming auction be fixed equal to the realized price of 1800 MHz spectrum in the February 2014 auction? If not, what should be the ratio between the reserve price for the auction and the valuation of the spectrum?**

**Q28. If the realized prices in the February 2014 auction for 1800 MHz spectrum is taken as the reserve price of 1800 MHz for forthcoming auction, would it be appropriate to index it for the time gap (even if less than one year) between the auction held in February 2014 and forthcoming auction? If yes, what rate should be adopted for the indexation?**

*Response:*

**1800 MHz**

- Valuation is subjective and hence in lieu of any other information, the nearest value of an entity or commodity may be given to the price which has been obtained through auctioning the entity or commodity.
- Considering the fact that there were auctions for both 1800 MHz and 900 MHz which led to price discovery, it may be justified to keep those prices discovered as the Valuation of Spectrum for upcoming auctions as the time period which has lapsed since them has been less than a year.

### **Case 1 Demand $\geq$ Supply**

- In the circles where Demand was greater than or equal to the supply for the 1800 MHz auctions in Feb 2014, the auction discovered price may be used as the Reserve price for the upcoming 1800 MHz auctions.
- There may not be a need to use Indexation on the prices discovered in February 2014 as these were determined less than 1 year ago and the effect of improvement in the industry sentiment, if any, would automatically reflect in the bidding in the forthcoming auctions.

### **Case 2 Demand $<$ Supply**

- In the circles where Demand was less than the supply for the 1800 MHz auctions in Feb 2014, the following approaches may be considered
  - A fresh valuation exercise may be undertaken using the approaches suggested by TRAI for arriving at the reserve price for these circles.
  - The variance in the output of the above valuation exercise and the Feb 2014 reserve prices may be examined, and if the variance is minimal, the Feb 2014 prices may indeed be taken as the reserve prices for the upcoming 1800 MHz auctions, for these particular circles.
  - In case the variance is high, a further study may need to be conducted into the new valuation results, with an analysis of factors as to why the variation is high. In case these factors are justifiable taking into account the change in industry dynamics, sentiment and other macroeconomic factors, the new valuation may be taken as the reserve price for the upcoming auctions.
- Finally, the Reserve Price can then be determined accordingly by TRAI in line with the last Recommendations provided in September 2013.

**Q23. Should the value of 900 MHz spectrum be derived on the basis of the value of 1800 MHz spectrum using technical efficiency factors (1.5 times and 2 times) as discussed above?**

**Q24. Should the economic efficiency approach as discussed above be used to calculate the premium for the 900 MHz spectrum, based on the additional CAPEX and OPEX that would be incurred on a shift from this band to the 1800 MHz band?**

**Q25. Is there any other method that could be used for arriving at the valuation of the 900 MHz spectrum? Please support with detailed methodology.**

**Q26. As in the case of the September 2013 Recommendations and adopting the same basic principle of equi-probability of occurrence of each valuation, should the average valuation of the 900 MHz spectrum be taken as the simple mean of the valuations obtained from the technical and economic efficiency approaches (and any other method)?**

*Response:*

**900 MHz**

- The spectrum for 18 LSAs in 900 MHz which are expiring and would be put up in the upcoming auctions, the prices discovered through auctions in February 2014 is not available as in this band only 3 metro LSAs for 900 MHz were auctioned in February 2014
- Hence these may not deem to be fit to be comparable with the 18 LSAs (which are non-metro) for benchmarking exercise using Co-relation coefficient method and multiple regression methods.
- Therefore the TRAI may consider using the Technical Efficiency of 900 MHz band vs. the 1800 MHz band, and discovering the value of 900 MHz using the technical efficiency factors. We are of the opinion since the technical efficiency translates into operational advantages for the operators in terms of lower capex and better spectral efficiency, the economic efficiency is automatically captured in the same.
- The TRAI may also undertake valuation of 900 MHz spectrum in the methods outlined for 1800 MHz including Producer Surplus, Production Function, Discounted Cash Flow for arriving at value of spectrum to co-relate with the value derived through Technical Efficiency.

- TRAI may take the average values derived from these methods to arrive at the valuation as there is no conclusive evidence which proves that one method is more reliant than the other.
- Finally, the Reserve Price can then be determined accordingly by TRAI in line with the last Recommendations provided in September 2013.

**Q18. Should the revenue surplus approach be used to arrive at the value of 1800 MHz spectrum? Do you agree with the assumptions made?**

*Response:*

- The revenue surplus method is an additional method of valuation considered in the present recommendation made by TRAI.
- If the value derived from this method renders closely to the results derived from DCF method, it may be investigated if one method is not replicating the other in its approach to arrive at the value of spectrum.
- If this method is replicating its approach, then use of this method may also lead to increase of weightage of one particular method and skew the valuation in a particular direction

**Responses Submitted by:**

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