



November 6, 2017

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Subject: Vodafone's Response to TRAI Consultation Paper dated 28th August 2017 on "Auction of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300-3400 MHz and 3400-3600 MHz bands"

Dear Sir,

This is in reference to the Consultation Paper on "Auction of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300-3400 MHz and 3400-3600 MHz bands", issued by TRAI on 28.08.2017.

In this regard, please find enclosed our comments to the above-said Consultation Paper.

We hope that our submissions will merit your kind consideration and support.

Thanking you,

Yours sincerely,

For **Vodafone India Limited and**
Vodafone Mobile Services Limited

P. Balaji
Director – Regulatory, External Affairs & CSR

Encl: As stated above

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Vodafone Response to TRAI Consultation Paper dated 28th August 2017 on “Auction of Spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300-3400 MHz and 3400-3600 MHz bands”

EXECUTIVE SUMMARY

- A. Recommendations with regard to the timing of the next round of auctions should take into account
 - i. The financial situation of the industry**
 - ii. The spate of consolidations/exits in the sector****
- B. Block sizes and minimum quantity for bidding in 700, 800, 900, 1800, 2100, 2300 and 2500 MHz bands be kept same as in the last auction. In case of 3300-3400 and 3400-3600 MHz bands, TRAI may consider auctioning this spectrum in blocks of 20MHz in TDD mode.**
- C. The condition in the 2016 NIA that rollout obligations will be considered to be met, if the required DHQs/BHQs have been covered using any technology in any band (including through spectrum acquired previous auctions or administrative allocations), should be continued with for the forthcoming auction as well, including for any new band that may be auctioned. Further, this approach may also be extended to spectrum acquired in previous auctions also. This will also ensure consistency in auction terms and also level playing field amongst all service providers.**
- D. There is a strong case for a significant and immediate relaxation or even removal of in-band spectrum caps and a relaxation in the overall band cap from 25% to 30%.**
- E. Auctions should be held at an appropriate time to ensure adequate participation.**
- F. Against the above, our principled approach to valuation is as below:
 - a. 50% discount in case of no bidders/bidding**
 - b. 30% discount in case spectrum was sold at reserve price**
 - c. Last auction price in case of market price discovery.****
- G. Reserve price, in all cases may be set at 20% discount to the revised valuation as suggested above.**

ISSUE-WISE RESPONSE

Q.1 (a) In your opinion when should the next access spectrum auction be held?



(b) If the spectrum auction is held now, should the entire spectrum be put to auction or should it be done in phased manner i.e. auction for some of the bands be held now and for other bands later based on development of eco system etc?

Please give your response band wise and justify it.

- a. In this regard, we first note that a significant portion of the spectrum put to auction in 2016 remained unsold. In the case of 700MHz and 900MHz no bid was received, whilst in other bands, the spectrum was sold in some service areas, where also, in several cases, the same was sold at reserve prices only.
- b. It is well recognized that spectrum lying unused with the Government is the most sub optimal/inefficient use of available spectrum. For this, it is important to ensure that spectrum reserve prices are set at a reasonable level and that adequate participation is ensured to achieve fair market discovery.
- c. While in principle, we believe that spectrum auctions should be a regular feature, however, TRAI is aware that there are a number of factors that will have an important bearing in this matter. These include:
 - i. **The financial situation of the industry:** the TRAI is aware that there is significant distress in the sector, due to various factors, of which the TRAI is well aware. The deteriorating financials also raise the question of whether the industry is either willing or able to acquire spectrum at this juncture.
 - ii. **The spate of consolidations/exits in the sector:** the TRAI is further aware that there is a spate of consolidations /exits that are underway in the market. This factor is also likely to have a bearing on the timing and success of the auctions.

In summary, while regular auctions may be desirable, the current lack of clarity, financial position of the industry as also the exits/consolidation that is taking place in the sector, are important considerations that will have a bearing on the timing and success of the auctions. TRAI may keep these factors in mind, whilst recommending when the next access spectrum auction be held.

Q.2 Do you agree that in the upcoming auction, block sizes and minimum quantity for bidding in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz bands, be kept same as in the last auction? If not, what should be the band-wise block sizes? Please justify your response.

- a. Yes, we agree that the block sizes and minimum quantity for bidding as suggested by TRAI, same as last auction, should be continued.



- b. In this regard, it may be noted that **the block size for 2300/2500MHz bands was reduced from 20MHz to 10MHz blocks**, in the 2016 auctions. However, the **spectrum trading guidelines** dated 12.10.2015, **still continue to prescribe that spectrum trading in 2300/2500 MHz will be in blocks of 20MHz**. We submit that this anomaly, that has arisen because of a subsequent development and the same needs to be corrected.
- c. We request that the TRAI may as a part of its recommendations on Spectrum, recommend that the spectrum trading guidelines be modified to permit trading of 2300MHz band in blocks of 10MHz.

Q.3 What should be optimal block sizes and minimum quantity for bidding in (a) 3300-3400 MHz and (b) 3400-3600 MHz bands, keeping in mind both the possibilities i.e. frequency arrangement could be FDD or TDD? Please justify your response.

- a. We suggest that TRAI may consider auctioning this spectrum in blocks of 20MHz in TDD mode.
- b. In order to ensure that there is no mismatch between auctions and spectrum trading guidelines, we suggest that TRAI also simultaneously recommend inclusion of these spectrum bands in the spectrum trading guidelines.

Q.4 Do you think that the roll-out conditions for 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz stipulated in the last auctions held in October 2016 are appropriate? If no, what changes should be made in the roll out obligations for these bands?

- a. It is first submitted that the 2016 NIA provides that rollout obligations will be considered to be met, if the required DHQs/BHQs have been covered using any technology in any band (including through spectrum acquired previous auctions or administrative allocations).
- b. This approach should be continued with for the forthcoming auction as well, including for any new band that may be auctioned.
- c. We further request that this approach may also be extended to spectrum acquired in previous auctions also. This will also ensure consistency in auction terms and also level playing field amongst all service providers.
- d. We further suggest that Rollout beyond the obligations laid down in the NIA should be incentivized to encourage deeper rollout to achieve Digital India objectives. This can be by way of a suitable incentive scheme that can be formulated using the existing USO fund corpus.
- e. We would also like to submit continuation of collection of levy on account of Universal Service Obligations (USO), the prime objective of which is to fund for services in the rural areas, is



leading to double whammy considering the extensive rollouts achieved and also considering the rollout obligations. TRAI has earlier also recommended phased removal of USO levy. We request that the same may be reiterated by TRAI.

Q.5 Should there be any rollout obligations in 3300-3400 MHz and 3400-3600 MHz bands? If yes, what should these be? Please justify your response.

- a. We note from the Consultation Paper that OFCOM has not proposed any rollout obligations for this band, noting that the technical characteristics of the 3.4 GHz spectrum made it more suited to adding capacity, but is not an effective means of extending existing levels of mobile coverage.
- b. As rollout is a means of ensuring mobile coverage, we believe that the TRAI may consider not prescribing any rollout obligations associated with this band.
- c. However, in the event that the TRAI were to recommend rollout obligations in this band, we submit that keeping in mind that this band will be a capacity band for 5G
 - i. Adequate time, of at least 5 years should be given.
 - ii. Licensees should be allowed to meet rollout using any technology in any band, as already permitted in 2016
 - iii. The TSTP should be finalized and made available ahead of the auctions so that there is clarity and informed bidding.

Q.6 Is there a need to prescribe spectrum cap in bands 3300-3400 MHz and 3400-3600 MHz? What spectrum cap provisions should be kept for 3300-3400 MHz and 3400-3600 MHz spectrum bands? Should these bands be treated as same or separate bands for the purpose of calculation of spectrum cap?

- a. We have already made our submissions with regard to spectrum caps in the short consultation that was initiated by the TRAI at the request of the IMG/DoT, where we have, in essence submitted that
 - i. There is a strong case for a significant relaxation or even removal of in-band spectrum caps and
 - ii. A relaxation in the overall band cap from 25% to 30%.
- b. The reasons for our submissions are given in our said response to TRAI.
- c. In view of the above, we submit that the same approach must be followed in case of the 3300-3400 MHz and 3400-3600 MHz bands as well.
- d. We further request that the TRAI recommendations on this be submitted at the earliest.



Q.7 Whether the prices revealed of various spectrum bands in the October 2016 auction can be taken as the value of spectrum in the respective band for the forthcoming auction in the individual LSA? If yes, would it be appropriate to index it for the time gap since the auction held in October 2016. If indexation is to be done then at what rate?

- a. The TRAI is aware that there were no bidders for the 700MHz band and the 900MHz band in the 2016 auctions. Clearly, applying the same valuation/reserve price to these bands would very likely lead to the same end result, i.e. no bids, especially as the financial position of the industry has deteriorated significantly since the last auctions were held.
- b. There is thus a need to cut/reduce the reserve prices in these bands as also ensure that there is adequate participation so as to ensure fair market discovery.
- c. We reiterate that reserve price as well as timing of the auctions are critical considerations for the success of the auctions. As submitted above, given the the deteriorating financial position of the industry as also the consolidation /exits that are taking place in the sector, it is highly unlikely that the auctions will see much participation.
- d. Keeping in mind our submission that auctions should be held at an appropriate time to ensure adequate participation, we submit that there is a need to reduce the reserve prices.
- e. We note that in earlier auctions, when spectrum band remained unsold, the TRAI had recommended a cut of 30-50% in the reserve price announced in the failed auction. We believe that a similar approach may be followed in the case of the above bands as well.
- f. As regards the other bands that were put to auction in October 2016, viz, 1800, 2100, 2300, 2500MHz bands, while the spectrum was sold in most service areas, this was often at reserve prices only. In such cases, we believe that the valuation may be discounted by 30% and the reserve price may be set at 20% discount to the revised valuation.
- g. We are of the view that indexing the value of the spectrum for the time gap is an incorrect practice and should be discontinued. Indexing historic prices to estimate current prices is not appropriate because the expectations about the future, change over time. This is all the more incorrect in case there is a financial deterioration in the industry, as in the present case.

Q.8 If the answer to above question is negative then, whether as per the practice adopted by TRAI in the previous valuation exercise, the valuation for respective spectrum bands be estimated on the basis of various valuation approaches/methodologies (Referred in Annexure 3.3) including those bands (in a LSA) for which no bids were received or spectrum was not offered for auction?



- a. It is first reiterated that it is important to ensure that auctions are recommended to be held at an appropriate time to ensure adequate participation.
- b. Against the above, it is submitted that the valuation for 700MHz and 900MHz bands, which saw no bidders, may be cut by 50%. The reserve price may be set at 20% discount to the revised valuation.
- c. In case of bands where demand was greater than supply and there was market price discovery, we believe that the discovered price may be taken as the value of spectrum in those band. The reserve price set at 20% discount to the market discovered price.
- d. In case of bands where spectrum was sold at reserve price, the valuation for the forthcoming auctions may be discounted by 30%. The reserve price may be set at 20% discount to the revised valuation.
- e. In case TRAI decides to carry out a fresh valuation of the spectrum in different bands, we submit that the TRAI may also consider the international benchmarks, as also the financial deterioration and the exits/consolidations that are taking place in the sector, whilst arriving at a valuation for the various bands.

Q.9 Whether the value of 700 MHz spectrum should be derived by relating it to value of other bands by using technical efficiency factor? If yes, with which spectrum band this band be related and what efficiency factor or formula should be used? Please justify your views with supporting documents.

Q.10 Else, what valuation approach should be adopted for the valuation of 700 MHz spectrum band? Please support your valuation approach with detailed methodology and related assumptions.

- a. We first reiterate that it is important to ensure that auctions are recommended to be held at an appropriate time to ensure adequate participation.
- b. We submit that there are a number of factors that are relevant whilst looking at the reserve price for any spectrum band – the propagation characteristics, the various technologies that can be deployed in the band and the eco-system that exists or is being evolved with regard to the respective technologies.
- c. With regard to propagation characteristics, we submit that 700MHz band has similar propagation characteristics as 800MHz and 900MHz bands. The band is a future 4G/5G band; however, the eco-system around this band is still evolving and there may be a case to apply an appropriate factor to address these aspects.



- d. We also reiterate that the TRAI must also consider the international benchmarks, as also the financial deterioration and the exits/consolidations that are taking place in the sector, whilst revising the valuation for the 700MHz band.

Q.11 Whether the value of October 2016 auction determined prices be used as one possible valuation for 2300 MHz spectrum for the current valuation exercise? If yes, would it be appropriate to index it for the time gap since the auction held in October 2016? Please justify your response with supporting documents/ report(s), if any.

Q.12 Whether the value of the 2300 MHz spectrum should be derived by relating it to the value of any other spectrum band by using technical efficiency factor? If yes, which band and what rate of efficiency factor should be used? If no, then which alternative method should be used for its valuation? Please justify your response with rationale and supporting documents.

Q.13 Whether the valuation of the 2500 MHz spectrum should be equal to value of similarly placed spectrum band? If no, then which alternative method should be used for its valuation? Please justify your response with rationale and supporting documents /report(s)/ detailed methodology, if any.

- a. Auctions should be held at an appropriate time to ensure adequate participation.
- b. We note that in the last auction, the reserve price of 2500MHz was the same as what was applied to 2300MHz band, despite the device eco-system of 2500 MHz being far poorer than that of 2300 MHz.
- a. We also note that the 2500MHz band saw no interest from the 2300MHz players, thus demonstrating that operators prefer to acquire spectrum in their existing bands/combinations.
- b. We therefore suggest that going forward, 2300MHz and 2500MHz bands may be treated as separate bands and we reiterate our principled approach to valuation as enunciated above, i.e.
- i. 50% discount in case of no bidders/bidding
 - ii. 30% discount in case spectrum was sold at reserve price
 - iii. Last auction price in case of market price discovery.

Reserve price, in all cases may be set at 20% discount to the revised valuation as suggested above.

- c. In the last auction, in two circles all of the 2500 MHz supply remained unsold – in these circles the valuation should be cut by 50%.



- d. In twelve circles, some supply remained unsold and in the balance circles the entire supply was sold but at the reserve price- in these Circles, the valuation may be cut by 30%
- e. In contrast, in the 2300 band, all supply offered across circles was sold. This indicates that the reserve price set for the 2500 MHz band was too high.
- f. We reiterate that indexing as a practice should be discontinued. Indexing assumes that the price of spectrum will keep going up, whereas in fact, this is not the case. This is all the more incorrect when there is a financial downturn in the sector, as is the present case.

Q.14 Whether the valuation of the 3300-3400 MHz spectrum bands and 3400-3600 MHz spectrum bands should be derived from value of any other spectrum band by using technical efficiency factor? If yes, what rate of efficiency factor should be used? If no, then which alternative method should be used for its valuation? Please justify your response with rationale and supporting documents.

- a. Upon ensuring that the timing is right for holding the auctions, we submit that as the bands of 3300-3400 MHz and 3400-3600 MHz are being auctioned for the first time, extreme caution may be exercised by TRAI in estimating a valuation and recommending a reserve price for these bands.
- b. We believe that the TRAI should look at international benchmarks in these bands and adjust these for the Indian scenario, by applying purchasing power parity and also keeping in mind the significant financial deterioration of the sector since the last auctions as also the exits/consolidations that are taking place in the sector.
- c. In this regard, we submit that there are relatively few price benchmarks for 3.5 GHz spectrum band globally as it has recently been earmarked for 5G. Some countries that have had 3.5 GHz auctions in the last 3 years include Ireland, Greece and Czech Republic. We note that the price discovered for 3.5 GHz band spectrum in these auctions has been around 1% – 15% of the respective 1800 MHz prices with a median of 2% and population weighted average of 5%, as seen from the Table below:

[Price in Euros]

Country	Population (Mn)	1800 Price (per MHz per capita)	3500 Price (per MHz per capita)	Price of 3500 / Price of 1800 %
Czech	10.5	0.156	0.018	11%
Greece	10.8	0.190	0.004	2%
Hungary	10.0	0.388	0.003	1%
Ireland	4.5	0.263	0.036	14%
Romania	21.4	0.047	0.002	5%
Median		0.190	0.004	2%



Pop. Weighted Average		0.171	0.008	5%
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- d. In view of the above, we suggest that the reserve price for 3400-3600 may be set at 5% of the historical market determined 1800 prices in India. This could provide a lower bound to the prices while allowing healthy competition and price discovery in the auctions.
- e. In addition to the above, it may be noted that in Europe, EC's Radio Spectrum Policy Group has recommended 3400 – 3800 MHz as the primary band for 5G. Consequently, we believe that 3300-3400 MHz spectrum is likely to have a poorer ecosystem than 3400-3600MHz.
- f. In view of the above, we submit that 3300-3400 MHz and 3400-3600MHz should not be treated as one band and further that the valuation of 3300-3400 MHz should be at 30% discount to the value of the 3400-3600 MHz band.

Q.15 Is there any other valuation approach than discussed above or any international auction experience/ approach that could be used for arriving at the valuation of spectrum for 700/800/900/1800/2100/2300/2500/3300-3400/3400-3600 MHz bands? Please support your suggestions with detailed methodology and related assumptions.

Q.16 Whether value arrived at by using any single valuation approach for particular spectrum band should be taken as the appropriate value of that band? If yes, please suggest which single approach/ method should be used. Please justify your response.

Q.17 In case your response to Q16 is negative, will it be appropriate to take the average valuation (simple mean) of the valuations obtained through the different approaches attempted for valuation of a particular spectrum band, as adopted by the Authority since September 2013 recommendations? Please justify your response.

- a. It is a well-known fact that the spectrum prices in India are amongst the highest in the world. These have not always been the outcome of fair market discovery, but due to extraneous pressures such as artificial scarcity in supply of spectrum, re-acquiring of expiry spectrum, etc.
- b. Further using these prices as a factor for determining the valuation /reserve prices for the next round of auctions has resulted in a self-propelled vertigo of high prices that has not only translated into a huge debts for the sector but also resulted in spectrum remaining unsold in various auctions.
- c. We submit that the TRAI should not rely on a single valuation approach as there are flaws in each of the approaches that have been used by TRAI. These have been pointed out in earlier consultations. We have also submitted that an averaging of **valuations obtained through the**



different approaches would be a more suitable approach. We suggest that this practice be continued in the present instance as well.

- d. In case of spectrum bands which are being auctioned for the first time or bands for which no bids have been received, we believe that it would be desirable to sense check its prices with those discovered in other regimes and at the very least apply a purchasing power parity for comparison purposes. This may be considered for the 700MHz and 3300-3400 MHz and 3400-3600 MHz bands.
- e. Most importantly, auctions should be held at an appropriate time to ensure adequate participation and fair market discovery. As highlighted above, given the deteriorating financial position of the industry as also the consolidation /exits that are taking place in the sector, it is highly unlikely that the auctions held in the near future, will see much participation.

Q.18 Is it appropriate to recommend Reserve price as 80% of the value? If not, then what should be the ratio adopted between the reserve price for the auction and the valuation of the spectrum in different spectrum bands and why?

- a. We submit that TRAI may continue with its practice of determining the reserve price at 80% of the estimated valuation of the spectrum.
- b. However, it is important that the valuation is arrived at looking at the market realities, the quantum of spectrum unsold in earlier auctions, international prices, benchmarks, etc.

Q.19 Whether the realized / auction determined prices achieved in the October 2016 auction for various spectrum bands can be taken as the reserve price in respective spectrum bands for the forthcoming auction? If yes, would it be appropriate to index it for the time gap since the auction held in October 2016? If yes, then at which rate the indexation should be done?

- a. TRAI must recommend that auctions are held at an appropriate time that will ensure adequate participation and fair market discovery.
- b. We reiterate our principled approach to valuation as enunciated above, i.e.
 - i. 50% discount in case of no bidders/bidding
 - ii. 30% discount in case spectrum was sold at reserve price
 - iii. Last auction price in case of market price discovery.

Reserve price, in all cases may be set at 20% discount to the revised valuation as suggested above.



- c. We reiterate that indexing as a practice should be discontinued. Indexing assumes that the price of spectrum will keep going up, whereas in fact, this is not the case. This is all the more incorrect when there is a financial downturn in the sector, as is the present case.

New Delhi

6 November 2017