



Telecom Regulatory Authority of India



Recommendations

on

Auction of Spectrum

(w.r.t. reference received from DoT on recommendations
of 23rd April 2012)

New Delhi 12th May, 2012

Mahanagar Doorsanchar Bhawan,

Jawahar Lal Nehru Marg, New Delhi-110002

**Response of TRAI on the clarifications sought by DoT on its
Recommendations on “Auction of Spectrum” dated 23rd April 2012**

1. Para 2.8

The Authority recommends that excess spectrum of 2x2.4 MHz should be immediately taken back from MTNL.

DOT View

The matter is sub-judice. Stay order has been passed by the Hon'ble Supreme Court consequent to appeal against TDSAT judgment on Petition No. 286 of 2007 and notice to BSNL/ MTNL to surrender excess spectrum by BSNL/ MTNL.

TRAI may note the above.

Response of TRAI

Unlike other private operators, MTNL was given the spectrum free of charge. Additionally, it has been assigned 2x12.4 MHz spectrum in both Delhi and Mumbai metros, and it is apparent from the subscriber figures of MTNL that the spectrum is underutilised. It may also be recalled that in May 2010, this Authority had indicated that 10 MHz of spectrum is sufficient in the Metros of Delhi and Mumbai. The excess spectrum of 2x2.4 MHz in Delhi and Mumbai has a value of around Rs. 3400 crore. Moreover, in these two metros, adequate spectrum in the 1800 MHz band is not available for refarming the 900 MHz spectrum. Therefore, even as it notes that the matter is *sub-judice*, the Authority would like to underline the importance of this measure and urges the Government to take necessary steps to get the

stay vacated so as to be able to withdraw the spectrum that is being inefficiently utilised.

It may be recalled that this Authority had, in May 2010, suggested that spectrum to the tune of 2x 2.4 MHz be withdrawn from BSNL and MTNL. Subsequently it emerged that only MTNL was in possession of 2 x 12.4 MHz of spectrum while BSNL held only 2 x 10 MHz. It is for this reason that the recommendation in April 2012 is restricted to MTNL. The Government need therefore to focus only on the legal case insofar as MTNL is concerned.

2. Para 2.12

The Authority recommends that the spectrum which is available in at least 75% of total number of districts of the LSA including the State capital (s) should be considered for allocation through auction.

DOT View

This recommendation read along with Table 2.4 (page 19), means that due to the conditions of partial availability and non existence in the state capital, there will be no spectrum available for auction in 1800 MHz band in the LSAs of UP(W), Rajasthan, HP, Bihar and J&K if reservation is carried out for refarming process. It is further observed that out of 122 cancelled licenses following pertain to the above LSAs:

S. No.	Licensed Service Area (LSA)	Amount of spectrum partially allotted (MHz)
1.	UP (West)- No. Of Cancelled Licences (4)	4.4
2.	Rajasthan- No. Of Cancelled Licences (4)	17.6
3.	Bihar- No. Of Cancelled Licences (5)	8.8
4.	HP- No. Of Cancelled Licences (4)	4.4
5.	J&K- No. Of Cancelled Licences (5)	13.2

Total Cancelled:-22

In view of Hon'ble Supreme Court decision of 02.02.2012 vide para 81 (iii) wherein a direction has been given " Keeping in view the decision taken by the Central Government in 2011, TRAI shall make fresh recommendation

for grant of license and allocation of spectrum in 2 G band in 22 service areas”, TRAI may clarify whether auction of the partial spectrum pertaining to the cancelled licences in the above LSAs may be conducted after making slots of 5 MHz with residual spectrum available; and its impact on the reserve price.

TRAI may be requested to clarify what is the rationale for fixing criteria of 75% of Districts and what would be the effect if the criteria is reduced to 50%. This criteria also needs to be examined with respect to its applicability where more than one state capital fall in the domain of one LSA like UP (W), NE, Maharashtra, Bihar, etc. Non availability of Spectrum in the State Capital (s) in the LSAs may also be kept in view.

Response of TRAI

In Para 2.10 of the recommendations, the issue of auction of some amount of spectrum being available in part of the LSA has been discussed and it has been recommended that if the spectrum is available in majority of the districts including important cities and state capital(s) in a LSA, it should be allocated for commercial use. The Authority is of the view that availability of spectrum in the State Capital (at least a majority of State Capitals in case of North-East) is essential for spectrum to be auctioned. The principle of State Capital will obviously not apply to those LSAs where the State Capital is not a part of that LSA. Reduction of the criterion to 50% from 75% does not make any difference to the amount of spectrum available (the only difference is in respect of Himachal Pradesh and Rajasthan but here too, effectively there is no difference as spectrum is not available in the State capitals) but at the same time, the 75% figure provides greater confidence to the bidders.

Table 1

Availability of spectrum in the 1800 MHz band									
S.No.	Circle	Spectrum presently available	Spectrum to be vacated due to cancellation of Licence including partial spectrum assignment	Total available spectrum including partial spectrum assignment	Total districts in LSA	Name of districts Spectrum not available	% of the districts the spectrum is not available	Total Spectrum available including spectrum available in at least 75 % districts of the LSA including State Capitals(s)	Total Spectrum available including spectrum available in at least 50 % districts of the LSA including State Capitals(s)
1	Delhi	11.6	4.4	16	Metro	0	0	16	16
2	Mumbai	5	13.2	18.2	Metro	0	0	18.2	18.2
3	Kolkata	23	17.6	40.6	Metro	0	0	40.6	40.6
4	Maharashtra	6	22.0	28	36	0	0	28	28
5	Gujarat	4.4	17.6	22	29	Ahmedabad, Jamnagar, Vodafone	10	22	22
6	AP	15	22.0	37	23	0	0	37	37
7	Karnataka	11.8	22.0	33.8	29	0	0	33.8	33.8
8	Tamil Nadu	25.4	22.0	47.4	33	0	0	47.4	47.4
9	Kerala	28	17.6	45.6	15	0	0	45.6	45.6
10	Punjab	1.4	17.6	19	22	Amritsar, Ludhiana	9	19	19
11	Haryana	4.4	22.0	26.4	21	Sirsa & faridabad	10	26.4	26.4
12	UP - West	8.2	17.6	25.8	37	Agra, Bareilly, Dehradun, Nanital	11	21.4	21.4
13	UP - East	0	17.6	17.6	48	Allahabad, Gorakhpur, Jhansi	6	17.6	17.6
14	Rajasthan	3.2	17.6	20.8	33	Bikaner, Barmer, Bharatpur, Dausa, Ganganager, Hanumangarh, Jodhpur, Jaipur, Jaisalmer, Jalore, Sirohi	33	3.2	3.2
15	M.P.	18	17.6	35.6	68	0	0	35.6	35.6
16	West Bengal	4	17.6	21.6	25	Darjeeline, Bardhaman, North 24 Parganas	12	21.6	21.6
17	H.P.	6.4	17.6	24	12	Chamba, Kangra, Kinnaur, Shimla, Sirmaur, Solan	50	19.6	19.6
18	Bihar	0	22.0	22	62	Patna, Purnea, Chapra, Jahanabad, ARA	8	13.2	13.2
19	Orissa	18	22.0	40	30	0	0	40	40
20	Assam	3.8	22.0	25.8	27	Dibrugarh, Jorhat, Kamrup	11	25.8	25.8
21	North East	7	22.0	29	55	East Khasi Hills District in Meghalaya, Tawang Dist. In Arunachal	4	29	29
22	J&K	6.4	22.0	28.4	22	Available only in Doda & Anantnag	91	15.2	15.2
	Total	211	413.6	624.6				576.2	576.2

It was also mentioned in Para 2.10 that the fact that this spectrum is presently available only in part of the LSA should be clearly informed to the bidders before the auction, along with the details of the districts where it is not available. While giving the details, the WPC should furnish the likely time by which the spectrum may be made available in such districts. Whenever the spectrum is vacated in those

districts, the successful bidder will be assigned the same. While the bids will be sought for the entire spectrum, the bid amount will be collected only for the spectrum available and the balance collected as and when spectrum is available in each District, the amount being pro-rated to the population of that district and the balance period (of the 20 years).

3. Para 2.34

The Authority recommends that all spectrum to be assigned through the auction process in future shall be liberalised. In other words, spectrum in any band can be used for deploying any services in any technology.

DOT View

1. “liberalised” usage will need detailed study on use of different technologies in the same band so that issues such as interference, requirement of guard band etc, to ensure co-existence of different technologies are addressed.

Eg: use of LTE and GSM technologies in adjacent slots in the 900 MHz band by different service operators.

Preliminary studies show that there is a requirement of guard band to ensure interference-free operation and co-existence of different technologies in adjoining slots. Hence, guard band requirement in case of mixed usage of technologies in the same band is needed to be taken into account while indicating the availability of spectrum blocks for auction.

2. TRAI may consider adding the words: “within the scope of respective licences” after the word “services” and also the words “for IMT applications” between the words “spectrum” and “to be” in the Recommendation 3.
3. Further, it is mentioned that Microwave spectrum in shared bands is allotted to various telecom service providers eg NLD, ILD, ISP and Captive Users subject to availability and spectrum charging mechanism varies from revenue share to formula basis. Clarification is, therefore, required on whether the process of assignment of spectrum in future through auction is limited to Access Spectrum only or it includes Microwave Backhaul spectrum as well.

Response of TRAI

In Para 2.20 of the recommendations, it has been mentioned that, in many countries, the use of 900 and 1800 MHz bands has been liberalised and a number of commercial networks have been launched with UMTS900 and LTE services using 1800 MHz band. Annexure III of the consultation paper also gives the list of the countries where UMTS900 networks have been launched after the liberalisation of this band. The Authority, therefore, is of the view that there is no need to hold up the application of the principle of liberalisation to the spectrum that is proposed to be auctioned. It may also be recalled that the Authority has also recommended that the spectrum holders may be permitted to undertake frequency reconfiguration between themselves through mutual arrangements.

It is not clear as to why the Department of Telecommunications would like the Authority to add the words “within the scope of respective licences” after the words “services” and also the words “for IMT applications” between the words “spectrum” and “to be” in the recommendations 3. The Authority’s recommendations in Para 2.34 is clear. The Authority’s recommendation regarding liberalisation of spectrum was in the context of some of the spectrum bands such as the 800, 900 and 1800 MHz bands having been restricted to specific technologies in the UAS licences. Liberalisation of spectrum refers to the removal of technology restrictions and gives the licensee an option to deploy newer technologies. The intention of the Authority, unambiguously, is that spectrum in any band once obtained in an auction, can be used for deploying any services using any technology. However, a distinction is to be made between the auction in 2001 which was for the licence embedded with spectrum and with a channel plan of 200 KHz for

GSM technology or 1.25 MHz for CDMA technology. The spectrum therefore was not liberalised. Consequently, the spectrum embedded in the current UAS licence is specifically restricted. On the contrary, in case of the spectrum that was auctioned in the year 2010 (paired 5 MHz for 3G and unpaired 20 MHz for BWA) was without any restriction on the use of technology. And, therefore, is liberalised spectrum. The successful bidders for spectrum in the 2010 spectrum auction could obtain any of the access service licence viz. UAS/CMTS in case of 3G spectrum and UAS/CMTS/ISP Cat ‘A’ licence in case of BWA spectrum. The successful bidders are also not prohibited from obtaining any licence that may be issued by the Government from time to time under the prevalent policies. Such spectrum assignees who have obtained spectrum through auction can now migrate to Unified Licence subject to meeting the eligibility criteria. They can provide any service under Unified Licence without any restriction on the technology to be used. Therefore, the suggestion to add the words “within the scope of respective licences” and also the words “for IMT applications” in the recommendations at Para 2.34 distorts the objective set by the Authority and effectively reintroduces the very restriction sought to be removed by the Authority.

The recommendations of April 2012 relate only to the spectrum bands which have been indentified internationally for providing access service commercially. The methodology for allocation of microwave backhaul spectrum has not been considered in these recommendations.

4. Para 2.81

The Authority recommends that the refarming of spectrum in the 800 MHz and 900 MHz bands should be carried out progressively at an early date but not later than the due date of renewal of the licences. The spectrum available with the service providers in the 900 MHz band should be replaced by spectrum in the 1800 MHz band, which should be charged at the price prevalent at the time of refarming.

DOT View

TRAI may clarify the following:

- i) The basis for recommending auction of one slot of 5 MHz even if additional slots are available for auction after making provision for re-farming and there is demand for such spectrum.
- ii) Greater clarity is required on the recommendations regarding timing of re-farming and quantum of spectrum to be set aside for meeting re-farming requirements at a later date for both 900 MHz and 800 MHz bands and whether there is scope for a more optimized approach that would not necessitate keeping a large quantum of spectrum reserved and unutilized even when there is demand.
- iii) TRAI may clarify as to what they meant by “progressively at an early date” and “price prevalent at the time of refarming”.

5. Para 2.82

The Authority recommends that the Government must actively explore the possibility of refarming of the spectrum in the 900 MHz band immediately, by invoking the authority to change the licence conditions.

DOT View

With regard to Recommendation 5, reference is invited to Recommendation 10, where TRAI has recommended that spectrum in 800 MHz should be progressively refarmed at the time of renewal of License.

Further, Legal tenability of refarming 900 MHz spectrum before expiry of the license needs to be examined.

Response of TRAI

2.81 (i)

It must be noted that the recommendation to auction one block of 5 MHz is only as a first measure. The Authority had never indicated that this should be the only spectrum to be auctioned. In fact, the recommendation of the Authority is that all spectrum should only be assigned through auction.

The reasons for suggesting only one block of 5 MHz to be auctioned in the first place have been amply explained in Paras 3.23 and 3.24 of the Recommendations dated 23rd April 2012. It may be recalled that the injunction of the Hon'ble Supreme Court to TRAI is *“Keeping in view the decision taken by the Central Government in 2011, TRAI shall make fresh recommendations for grant of licence and allocation of spectrum in 2G bands in 22 service areas by auction.....”* The need for refarming of spectrum is already accepted by the Government and therefore, spectrum needs to be kept aside for this purpose. In fact, as can be seen from Table 2.21 of the recommendations, adequate spectrum is not available even for refarming. Notwithstanding this, the Authority has, keeping in view

the Orders of the Hon'ble Supreme Court, recommended auctioning of one slot of 5 MHz of 1800 MHz spectrum. As proposed in Para 3.24, this amount can be 7.5 MHz in the event a new entrant is the second highest bidder.

It is a normal principle in auctions that the entire product available is not auctioned in one lot. The principle in any auction is that the demand should outstrip the supply. In the present scenario, there is no clarity about the number of likely participants in the auction. It is also to be noted that there has been no auction of 1800 MHz spectrum or 800 MHz spectrum in the last decade and therefore there is no indication of the actual market price. It is therefore necessary to determine the price which can be effectively made only if the lot is small, and not run the risk of disturbing the demand-supply equation required for an auction, in which case, there is always the risk of the price being lower.

One of the decisions taken by the central Government was that “for existing licensees who have so far been allocated only the start up spectrum of 4.4 MHz. the additional 1.8 MHz will be assigned on their becoming eligible, but the spectrum will be assigned to them at a price determined under the new policy.” (Press Statement dated 29.1.2011). This further reduces the amount of balance spectrum available. It must be noted that the refarming of spectrum is critical to ensure competition and level playing field among the telecom players and this decision was already taken by the Government.

Accordingly, the Authority recommended that after conducting the auction for spectrum in the 1800 MHz band, and reserving the spectrum required for refarming, out of the remaining spectrum if any, one block of 2x1.25 MHz of spectrum may be allocated to those licensees having 4.4 MHz of spectrum in the service area, at the auction discovered price for that service area.

As per the above recommendations, the availability of 1800 MHz spectrum for further allocation will be as follows:

S.No.	Circle	Available spectrum in 1800 MHz band	Spectrum Required for Auction	Spectrum available for refarming	Spectrum required for refarming including PSUs	Balance Spectrum	Amount of spectrum required for licensees having 4.4 MHz spectrum (@ 1.25 MHz)	Balance Spectrum
1	Delhi	18.4	5	13.4	22.2	-8.8	2.5	-11.3
2	Mumbai	20.6	5	15.6	22.2	-6.6	5	-11.6
3	Kolkata	40.6	5	35.6	16.4	19.2	2.5	16.7
4	Maharashtra	28	5	23	16.4	6.6	3.75	2.85
5	Gujarat	22	5	17	18.4	-1.4	3.75	-5.15
6	AP	37	5	32	16.2	15.8	3.75	12.05
7	Karnataka	33.8	5	28.8	16.2	12.6	3.75	8.85
8	Tamil Nadu	47.4	5	42.4	10.4	30	1.25	28.75
9	Kerala	45.6	5	40.6	16.6	24	3.75	20.25
10	Punjab	19	5	14	21.8	-7.8	5	-12.8
11	Haryana	26.4	5	21.4	16.6	4.8	3.75	1.05
12	UP - West	21.4	5	16.4	10.4	6	3.75	2.25
13	UP - East	17.6	5	12.6	10.2	2.4	3.75	-1.35
14	Rajasthan	3.2	5	NA	18.4	NA	5	NA
15	M.P.	35.6	5	30.6	16.6	14	3.75	10.25
16	West Bengal	21.6	5	16.6	10.6	6	2.5	3.5
17	H.P.	19.6	5	14.6	16.6	-2	5	-7
18	Bihar	13.2	5	8.2	10.4	-2.2	5	-7.2
19	Orissa	40	5	35	10.4	24.6	3.75	20.85
20	Assam	25.8	5	20.8	10.4	10.4	1.25	9.15
21	North East	29	5	24	13	11	2.5	8.5
22	J&K	15.2	5	10.2	8	2.2	3.75	-1.55
	Total	581	110	472.8	328.4	160.8	78.75	87.05
<p>Note: 2.4MHz of spectrum in 1800 MHz band to be withdrawn from MTNL in Delhi and Mumbai is counted in the available spectrum in this table.</p>								

It can be seen from the above table, only in nine service areas viz. Kolkata, AP, Karnataka Tamil Nadu, Kerala, MP, Orissa, Assam and North East, more than 5 MHz of spectrum will be available after reserving the spectrum for auction, refarming and for licensees

having 4.4 MHz of spectrum. At the same time, in respect of licenses having 4.4 MHz, the recommendation in Para 3.45 was also that Government should consult the Ministry of Law. In case spectrum is not reserved for licensees having 4.4 MHz of spectrum, then 5 MHz of spectrum will also be available in the service areas of Maharashtra, UP (W) and West Bengal. In Para 3.117 of the recommendations, the Authority has recommended that the balance spectrum in the 1800 MHz band may be auctioned in the first half of 2013-14. On 24th April 2012, the Supreme Court ordered that the auctions should be conducted by end of August 2012. In the light of this, the Authority would like to suggest that the balance spectrum in 1800 MHz band, which was earlier suggested to be auctioned in the first half of 2013-14, may now be auctioned after the auction of spectrum in 800 MHz band during the current financial year itself. Accordingly, the Authority would now suggest to the Government that where more than 5 MHz of spectrum is available after reserving for auction and refarming, a total of 10 MHz, in eight blocks of 1.25 MHz each, may be put to auction instead of 5 MHz of spectrum. In such a scenario, while the existing operators will be allowed to take maximum 2 blocks of 1.25 MHz each, new entrants may take maximum 4 blocks of 1.25 MHz. However, the condition that if the second highest bidder is a new entrant, it shall be entitled to 4 blocks of 1.25 MHz each, but at the price offered by the highest bidder shall not be applicable in these service areas.

The Authority would however like to avoid a situation of absence of enough competition among the bidders, and accordingly recommends that the 2nd tranche of 5 MHz be put to auction, only if the number of registered bidders is more than four (4).

(ii) The apprehension of DoT that recommendation of not auctioning all the spectrum would mean keeping a large quantum unutilized is

unfounded. As it can be seen from Table 2.16, taking into account the 900 MHz spectrum allotted to the two PSUs, around 78% of the total spectrum in this band will be available for refarming between the years 2014 and 2015 and by the year 2016, around 85% of the total spectrum can be refarmed. Keeping in view the fact that the due date of renewal is far in some cases, the Authority has also recommended that Government may explore the possibility of refarming of the spectrum in the 900 MHz band immediately, by invoking the authority to change the licence conditions. In the event the Government considers this not to be feasible, Government need not keep the balance requirement of 15% of the 1800 MHz spectrum, reserved for refarming of the spectrum, which will be required only in years 2021 to 2024. Government may make an effort subsequently to ensure that this balance requirement in 1800 MHz is obtained from other Government agencies. The Authority would however like to underline that 1800 MHz of spectrum should be reserved at least insofar as the 85% of the 900 MHz spectrum is concerned i.e. the licences that are due for renewal in the year 2014 to 2016 as well as the spectrum of MTNL and BSNL. Since the PSUs have not paid any money for the spectrum that they hold, there should be no bar in refarming the spectrum held by them immediately.

(iii) The Authority has recommended in Para 2.82 that the Government must actively explore the possibility of refarming of the spectrum in the 900 MHz band immediately, by invoking the authority to change the licence conditions. Also, in some cases, the date of renewal is far. Therefore, it has been recommended that the refarming should be done progressively at an early date. It has been clearly mentioned that it should not be later than the date of renewal.

The auction of 1800 MHz spectrum will take place in 2012 and the price discovered in the auction can be applied for the 1800 MHz spectrum to be given to the licensees (whose 900 MHz spectrum is being refarmed) in 2014. It is a normal principle that the auction discovered price needs to be adjusted for inflation in case of its application later than one year from the date of auction. Therefore, the 2012 price needs to be adjusted for the 1800 MHz being given in 2014. Other licenses will come up for renewal in later years. As such, the price of 2012 will need to be appropriately adjusted or a later auction discovered price has to be applied to the later cases. This is the intention in the expression “price prevalent at the time of refarming”.

2.82 In Para 2.81, it has been recommended that the refarming of spectrum in the 800 MHz and 900 MHz bands should be carried out progressively at an early date but not later than the due date of renewal of the licences.

However, in view of the huge potential of the spectrum in this band for the proliferation of wireless broadband services through deployment of IMT technologies, the Authority has also recommended that the Government should actively explore the possibility of refarming of the spectrum in the 900 MHz band immediately, by invoking the authority to change the licence conditions. In case of refarming of 900 MHz spectrum, 1800MHz spectrum is immediately available. However, in case of 800MHz, the DoT has to carry out the interference studies. Moreover, as intimated by DoT, only 7.5 MHz in the 1900 MHz band is available and it is being recommended that DoT should explore the possibility of making available complete 10 MHz in this band for the purpose of refarming. As soon as this exercise is completed, DoT should also explore the possibility of refarming of the spectrum in the 800 MHz

band immediately, by invoking its authority to change the licence conditions.

6. Para 2.84

Since the application for renewal of licenses must be made at least 30 months in advance of the expiry of licenses, the Authority recommends that the 900MHz spectrum be auctioned at least 18 months in advance so as to enable the winning bidders to be ready with the deployment plans. Accordingly, the Authority recommends that the auction of 900MHz spectrum may be carried out in the first half of the year 2013.

DOT View

Spectrum in 900 MHz band is likely to be available only at the time of expiry of current License period. Hence, it is not clear as to how it can be auctioned 18 months in advance.

In addition, TRAI may provide the reasons for refarming 900 MHz band before expiry of the licenses whereas TRAI has recommended spectrum in 800 MHz band should progressively be refarmed at the time of renewal of licenses of such operators.

Response of TRAI

It may be recalled that this Authority had, in May 2010, recommended that the application for extension of licences must be made 30 months in advance of the due date for extension and that the Government must convey its decision in six months thereafter. This leaves 24 months for the operator to know whether or not its licence is extended and the conditions attached to the extension. In case of licensees holding spectrum in the 900 MHz band, the spectrum would be replaced by spectrum in 1800 MHz and consequently, the spectrum in the 900 MHz band would be available for auction. The licensee from whom the spectrum in 900 MHz is refarmed is also eligible to participate in the said auction. It is necessary to conduct the auction well in advance so that in the event

an operator is not successful in regaining the 900 MHz spectrum in the said auction, it can plan for appropriate addition to its network, based on the 1800 MHz spectrum. Simultaneously, the successful bidder can also plan for the deployment of the network for 900 MHz spectrum. It is in this context that the Authority has recommended that the spectrum should be auctioned 18 months in advance so as to enable the successful bidders to be ready with the deployment plans. This does not mean that the spectrum should actually be available with the Government at the time of auction. The auction would be conducted with the stipulation that the spectrum would be released at a pre determined date. The Government should assess the amount of spectrum which shall be available because of expiry of licences and auction the same in advance. This practice is followed in other countries. For instance, Australia is auctioning the 700 MHz spectrum in advance of the date of its likely availability.

Para 2.87

The Authority recommends that in Circles where the amount of spectrum in 1800 MHz band is insufficient for carrying out fully the refarming exercise, immediate steps must be taken to get the Government agencies to vacate the 1800 MHz spectrum so that the entire 900 MHz spectrum can be refarmed.

DOT View

This depends on the vacation of spectrum by Government agencies.

Response of TRAI

The Authority holds the view that vacation of the 1800 MHz band spectrum held by Government agencies should be expedited, particularly in those LSAs where there is not enough spectrum for refarming. In its recommendations of May 2010, the Authority had observed in Para 1.92 that “... Most of this refarming will have to be done from the Government agencies including Defence and Department of Space. As the spectrum assigned to these agencies is being used for some specific purposes, either an alternate media like optical fibre or some other non-commercial alternate spectrum band will have to be provided and the incumbents will have to replace/ upgrade their equipment so as to work with the alternate media. This will require considerable expenditure on the part of the existing users. As this exercise is being done to vacate the spectrum and employ it for commercial uses, it is necessary to meet the required expenditure.”

In May 2010, the amount of spectrum available in 1800 MHz band was very limited. While consequent upon the orders of the Hon’ble Supreme Court, the availability of 1800 MHz band spectrum is vastly improved, it is still insufficient in certain service areas. It is particularly in these service areas that special attention needs to be focused on the vacation of spectrum held by Government agencies. In

May 2010, the Authority recommended that a specific fund for spectrum refarming be created and that 50% of the realisation from all proceeds from spectrum including from the auction proceeds as well as from the Spectrum Usage charges should be transferred to this fund.” The Authority reiterated the above, in its recommendations of November 2011. Again, in April 2012 recommendations, this Authority has, in the ‘conclusion’, re-emphasised the need to constitute the spectrum refarming fund and setting aside the requisite funds.

9. Para 2.103

The Authority recommends that the DOT should immediately arrange to allocate spectrum in the 1900 MHz band for refarming the spectrum in the 800 MHz band.

DOT View

Spectrum up to 5 MHz (4 carriers) have been assigned to telecom operators in 800 MHz band (824-844/869-889 MHz). A total of 20 MHz has been earmarked in 800 MHz band for CDMA based services, whereas as per NFAP 2011, the frequency band 1900-1910/1980-1990 MHz (only 10 MHz) is available in 1900 MHz for CDMA based services. Some part of this band is also proposed as Defence Band and therefore only 7.5 MHz has been identified for telecom services. Even availability of 7.5 MHz is uncertain and technical studies for co-existence of 3G WCDMA in 2.1 GHz band and 3G EVDO in 1900 MHz band are to be further carried out.

Response of TRAI

The proposal regarding the Defence Band Plan was not conveyed to the Authority earlier. Table 2.23 of the recommendations set out the position relating to the amount of spectrum required for refarming. Other than the spectrum required to be refarmed from the public sector undertakings, the requirement of spectrum is 10 MHz or less in all the circles except Rajasthan. The Government should, therefore, examine whether it is truly essential to set up 2.5 MHz for Defence band or whether alternative modes can be explored. At the recommended reserve price, the value of 2.5 MHz is of the order of Rs. 18,110 crore. In the event this is not possible, and the Government is left with only 7.5 MHz of 1900 MHz spectrum, Government can still carry out the refarming in 8 service areas. In other service areas, spectrum beyond 2.5 MHz, which was the initial

allocation, may be taken back, auctioned and the auction discovered price applied to the spectrum that has been left with the service provider.

In respect of the 800 MHz spectrum held by the PSUs, since no more spectrum is available for refarming, it may be assessed if their subscriber base warrants the retention of this spectrum at all and if so, the PSUs may be charged the price that has been discovered in the auction.

11. Para 2.130

The Authority recommends that the auction of spectrum in 700 MHz band may be carried out at a later date, preferably in 2014 as and when the ecosystem for LTE in the 700 MHz is reasonably developed, so as to be able to realise the full market value of the spectrum.

DOT View

Modalities of auction will be worked out at the time of auction

Response of TRAI

The spectrum in the 700 MHz band is readily available and the Authority has already recommended that the spectrum in the 700 MHz band should be auctioned when the eco system in that band is reasonably developed. It has also recommended the auction format and the reserve price. As such, it is not clear, what other modalities will be required to be worked upon.

12. Para 3.39

The Authority recommends the following structure for the auction of spectrum in future:

- *The auction of spectrum shall be conducted using Simultaneous Multiple Round Auction (SMRA) format.*
- *As regards the auction of spectrum in 1800 MHz and 800 MHz bands to be conducted immediately following these recommendations, it should be held in single stage.*
- *Every auction shall be open to all those holding CMTS licence/ UAS licence / Unified licence or eligible for grant of Unified Licence. Auction shall not be open to those that hold spectrum above the prescribed cap.*
- *If a new entity is successful, then the Authority recommends that such an entity will have to take either the National level or the State level Unified Licence, as the case may be.*
- *In all auctions at least 5 MHz of spectrum shall be offered, except where the spectrum available is less than 5 MHz.*
- *Spectrum shall be offered in blocks of 1.25 MHz each.*
- *For the auction that is to immediately follow these recommendations, the amount of spectrum to be offered will follow the scheme laid out in Para 3.39 above.*
- *The final bid price of one auction in a given band shall be the base price for the next auction whenever it takes place, with the rider that it will suitably be adjusted in the event of gap beyond one year.*

The limit for acquisition of spectrum shall be 50% of the spectrum assigned in each band in the respective service area and 25% of the total spectrum assigned in all bands put together in each service area.

DOT View

Bullet 1

TRAI may clarify what they mean by Simultaneous Multiple Round Auction (SMRA) format.

Bullet 2

Read with Recommendations No. 17 and 26. TRAI may clarify the meaning of single stage auction.

Bullet 3

(i) “Prescribed cap” needs clarity whether it refers to spectrum holding before auction or after auction?

(ii) Clarification is requested from TRAI that the prescribed cap refers to the last bullet.

(iii) Eligibility for participating in the auction of spectrum will be in conformity with Part B (Para 28) of UL Guidelines.

(iv) The company (ies)/licensees whose licences are slated to be quashed on 7.9.2012 also needs to be considered eligible. It needs to be clarified whether they would be treated as new entrant or existing operators.

(v) Further, the eligibility of CMTS/ UAS licensee in respect of net-worth will be as per their existing licence conditions on the date of application. This is different than the net-worth requirement given in Part B (Para 28) of UL Guidelines.

vi) Eligibility criteria for bidders and quantum of spectrum that new/ existing operators would be entitled to; implications of applicability of auction price for any spectrum already held by existing incumbents and consequential impact of these aspects on level playing field

Bullet 5 & 6

The auction price of fragmented chunks of spectrum is likely to be less than contiguous 5 MHz spectrum. It may also be noted that Reserve Price has been fixed at per MHz basis. TRAI may be requested to clarify whether for the purpose of auction; reserve price is to be shown for a block of 5 MHz or a block of 1.25 MHz.

(i) If a slot of 5 MHz is not available, then whether one block of 1.25 MHz or up to three blocks of 1.25 MHz shall be put for auction.

(ii) Does the above scenario also apply for 800 MHz band for which auction to be conducted immediately after auction of 1800 MHz band?

(iii) Para 3.24 of TRAI recommendations is reproduced below:

“3.24 The Authority is conscious of the current situation where some of the existing licences have been quashed by the Hon’ble Supreme Court or those who had earlier applied for licences might wish to bid for the spectrum. The Authority therefore recommends that for this round of auction only, a provision be made to allow a successful bidder who is a new entrant to take upto 4 blocks of 1.25 MHz so that it has the minimum spectrum to commence operations. In the event the successful bidder is an existing spectrum holder of that band, it shall be restricted to only two blocks of 1.25 MHz each. Also, in such a case, if the second highest bidder is a new entrant, it shall be entitled to 4 blocks of 1.25 MHz each, but at the price offered by the highest bidder. Only in such an event, the total spectrum made available through this auction will be 7.5 MHz.”

Para 3.24 of TRAI recommendation has not been reflected in the summary of the Recommendations and it needs clarity as spectrum to be auctioned has been mentioned as 7.5 MHz. This situation needs to be clarified in case of auction of 800 MHz band also.

(iv) Further clarification is required on the roll-out obligations also in relation to the operators who win only 1.25 MHz of spectrum, whether as a new entrant or as an existing operator.

Bullet 9

In its Recommendation on “Spectrum Management and Licensing framework” of May, 2010 and subsequent recommendations, the limit of 25% as also mentioned herein was prescribed. Limit of 50% of spectrum holding in a band in an LSA might lead to duopoly regime in the band. TRAI may clarify this aspect.

Response of TRAI

Bullet 1

As clearly mentioned in Paras 3.4 to 3.6 of the recommendations, the auction format used in the auction of 3G and BWA spectrum held in 2010 has been referred to as Simultaneous Multiple Round Auction (SMRA) format. The Authority’s recommendation is to follow the same format that was adopted in the 2010 auction.

Bullet 2

In response to the pre-consultation paper, some stakeholders suggested to conduct the auction in more than one stages, with the suggestion that the first stage be reserved for the licensees whose licences have been quashed by Hon’ble Supreme Court and for new eligible entrants. Accordingly, in the consultation process, one of the issues involved was that whether auction should be held in single stage or multiple stages. The issue has been examined in the Paras in 3.8 to 3.13 of the recommendations and it has been concluded in Para 3.14 that the Authority is of the view that there should be only a single auction open for all including the existing licensees and any

entity holding or eligible for a unified licence subject to the condition that the licensee does not have spectrum above the spectrum cap.

Bullet 3

- i. The 'Prescribed Cap' refers to spectrum holding after the auction.**
- ii. Yes. The 'Prescribed Cap' refers to the last bullet, i.e. the limit for acquisition of spectrum shall be 50% of the spectrum assigned in each band in the respective service area and 25% of the total spectrum assigned in all bands put together in each service area.**
- iii. Yes. The eligibility for participating in the auction of spectrum will be in conformity with Part B (Para 28) of UL Guidelines.**
- iv. The companies/licensees whose licences are slated to be quashed as per the direction of the Hon'ble Supreme Court will have to be treated as new entrants because such entities, if successful in the auction will also have to apply obtain a new unified licence.**
- v. In case of CMTS/UASL, the eligibility condition with respect to the net worth requirement will be as per the existing licence conditions. However, in case of a new entity, the same will be as recommended in Part B (Para 28) of the UL Guidelines.**
- vi. The eligibility criteria for bidders and quantum of spectrum that new/existing operators would be entitled to are given in Para 3.16 and Para 3.24 of the recommendations. The excess spectrum, if any, held by the licensees will be paid for at the auction discovered price. The Authority is of the view that the existing incumbents will also be paying the auction determined price for the spectrum already held by them if they wish to**

liberalise it and use it for any technology/services. Therefore, there will not be any issue of level playing field.

Bullet 5 & 6

The Authority has recommended the reserve price on per MHz basis for ease of understanding. However, as the block size is 1.25 MHz, the reserve price can be fixed either on per MHz basis or for a block of 1.25 MHz.

- i. & ii. In case 5 MHz of spectrum is not available for auction, then the maximum number of blocks of 1.25 MHz that are available should be put to auction. This will also apply for spectrum in the 800 MHz band.**
- iii. In the recommendations given in bullet 7, it has been recommended that “For the auction that is to immediately follow these recommendations, the amount of spectrum to be offered will follow the scheme laid out in Para 3.24”.(Refer corrigendum to the recommendations)**
- iv. In Para 3.24, it is mentioned that “The Authority therefore recommends that for this round of auction only, a provision be made to allow a successful bidder who is a new entrant to take upto 4 blocks of 1.25 MHz so that it has the minimum spectrum to commence operations. In the event the successful bidder is an existing spectrum holder of that band, it shall be restricted to only two blocks of 1.25 MHz each. Also, in such a case, if the second highest bidder is a new entrant, it shall be entitled to 4 blocks of 1.25 MHz each, but at the price offered by the highest bidder. Only in such an event, the total spectrum made available through this auction will be 7.5 MHz.”**

A New entrant has the opportunity to get 4 blocks of 1.25 MHz. Therefore, the roll out obligations shall be binding on all

successful bidders including the new entrants. Regarding the applicability of these roll out obligations for the existing licensees, the Authority had already recommended in May 2010 and reiterated in Nov 2011 that the modified roll out obligations should be applicable to all existing CMTS/UAS licensees.

Bullet 9

In its recommendations of November 2011, the restriction of 25% of the spectrum assigned, by way of auction or otherwise in the concerned service area was only in respect of 2G bands and particularly for the spectrum in 900 and 1800 MHz bands. However, what is being proposed is a policy for all bands. Apart from these bands, spectrum in other bands like 700/800/2100/2300 etc will be auctioned. Therefore, the Authority has recommended that the limit for acquisition of spectrum shall be 50% of the spectrum assigned in each band in the respective service area and 25% of the total spectrum assigned in all bands put together in each service area.

The M&A policy states that the maximum holding should be 25% of 900 and 1800 bands. The intention was very clear that it is these two bands put together. This is also borne out by the fact that in 800 MHz band, the Authority had recommended 10 MHz as the limit, which amounts to 50%. In respect of 2300 MHz band too, two operators have been given the spectrum through auction, rendering each to be the holder of 50% of the spectrum. While theoretically duopoly may be possible, practical it is not likely to occur because already there are different licensees holding spectrum in different bands.

13. Para 3.44

The Authority recommends that after conducting the auction for spectrum in the 1800 MHz band, and reserving the spectrum required for refarming, out of the remaining spectrum if any, one block of 2x1.25 MHz of spectrum may be allocated to those licensees having 4.4 MHz of spectrum in the service area, at the auction discovered price for that service area. It should be clearly understood that while this tranche of 2x 1.25 MHz will be paid for at the auction discovered price, it will be treated on par with the unliberalised spectrum of 4.4. MHz that is held by the licensee, unless the licensee opts to liberalise the 4.4.MHz spectrum also by paying the auction discovered price.

DOT View

This will require prescription for criteria for administrative allocation of spectrum. TRAI may clarify whether such existing licensees should also participate in auction process.

Clarification is required that when spectrum block of 1.25 MHz is allotted at the auction discovered price for the licensees having 4.4 MHz, then the total spectrum available with the licensee would be 5.65 MHz.

Further, for the liberalised spectrum, the licensee needs only 5 MHz (say for LTE) and for unliberalised use of spectrum (GSM), he needs only 5.60 MHz. In both the cases there would be excess spectrum with the licensee. Therefore, the rationale for allotment of 1.25 MHz in addition to 4.4 MHz spectrum licensee is not very clear. TRAI may clarify this issue.

Response of TRAI

As mentioned in Para 3.40,”..... the direction of Hon’ble Supreme Court to TRAI was to “keep (ing) in view the decision taken by the Central Government in 2011”. The DOT’s Press Statement of 29th January 2011 states that “In future, there will be no concept of

initial or start up spectrum. Spectrum will be made available only through market driven process. ... assignment of balance of contracted spectrum may need to be ensured for existing licensees who have so far been allocated only the start up spectrum of 4.4 MHz the additional 1.8 MHz will be assigned on their becoming eligible, but the spectrum will be assigned to them at a price determined under the new policy.”

As explained in Para 3.43, in order to comply with the above direction of the Hon’ble Court, the Authority was of the view that in service areas where spectrum is available in the 1800 MHz band after the auction and after setting aside spectrum for refarming, licensees who have 4.4 MHz of spectrum may be offered one block of 2X1.25 MHz spectrum at the price discovered in the auction for that service area. Since the block size now is 1.25 MHz, allocation of two blocks would take the total allocation beyond the contracted spectrum of 6.2 MHz.

Therefore, the Authority recommended that after conducting the auction for spectrum in the 1800 MHz band, and reserving the spectrum required for refarming, out of the remaining spectrum if any, one block of 2x1.25 MHz of spectrum may be allocated to those licensees having 4.4 MHz of spectrum in the service area, at the auction discovered price for that service area.

The Authority has also recommended, in Para 3.45, that the Government should consult the Ministry of Law on the appropriateness of the above course of action recommended, keeping in view the licence conditions as well as the order of the Hon’ble Supreme Court.

There is no restriction on such licensee to take part in auction and get upto two blocks of 1.25 MHz of spectrum.

14. Para 3.45

The Authority recommends that the Government may consult the Ministry of Law on the appropriateness of the course of action recommended in Paras 3.44 above, keeping in view the licence conditions as well as the order of the Hon"ble Supreme Court.

DOT View

Comments against Recommendation 13 may be referred. We may consider seeking legal opinion after receipt of clarification from TRAI. Legal opinion is required on recommendations 13, 14, 15, 26 (b), 28 and 29.

Response of TRAI

This is apparently an internal note of DOT which has appeared in the list inadvertently. While we have no comments to make, it appears highly inappropriate to seek legal opinion on recommendation 14 which is itself that the Government should consult Ministry of Law!

15. Para 3.49

The Authority recommends that the Service providers may be allowed to convert their existing 1800 MHz spectrum into liberalised spectrum on payment of the auction determined amount in which case they will be granted spectrum rights for a period of 20 years. They will be allowed to adjust the price paid by them for the existing spectrum on pro-rata basis for the balance period of the existing license.

DOT View

The following issues require clarification/ reconsideration by TRAI:

- (i) Whether the “price paid by them for the existing spectrum” is the entry fee for grant of CMTS/UASL etc., paid by each service provider.

In addition, for allotment additional spectrum beyond 4.4 /6.2 MHz only spectrum usage charges have been levied, no upfront fee for spectrum has been levied.

- (ii) Recommendation 4.2 of Unified Licence also refers, where adjustment of entry fee for migration to UL for the balance period was also recommended. This leads to adjustment of entry fee twice – once as entry fee for licence and again as upfront charge for spectrum.

Response of TRAI

- (i) **As explained in the Paras 3.46 and 3.47, subsequent to the auction, there will be three categories of operators in 1800 MHz band- the first category of operators will be those who were not having the spectrum prior to auction and after being successful in the auction, have only liberalised spectrum; the second category will be of existing operators who after winning some spectrum in the auction have some spectrum in the liberalised**

form and some spectrum assigned earlier through administratively means in the un-liberalised form; and the third category will be the existing operators who only have spectrum acquired earlier through administrative assignment. Therefore, the Authority was of the view that the existing operator should also be given the option to convert their present holding of spectrum to liberalised spectrum and also increase its validity subject to payment of price now determined through auction.

In order to ensure level playing field and to give the licensees, having spectrum in the un-liberalised form, an opportunity to get it liberalised at par with the licensees having liberalised spectrum, the Authority reiterates its recommendations given in Para 3.49.

As the spectrum in 1800 MHz band, that was allotted to existing licensees, was bundled with the licence, therefore, in case they choose to convert their spectrum holding in the 1800 MHz band from un-liberalised form to liberalised form, they will be allowed to adjust the price i.e. the Entry Fee paid by them for the existing licence on pro-rata basis for the balance period of the existing license. Though the nomenclature used is 'Entry Fee', the major part of the entry fee is on account of the spectrum given to the licensees.

- (ii) In case of migration to the UL, the rebate given is based on the entry fee of the respective UL, which is a small portion of the entry fee paid by the service providers for the CMTS/UAS Licence. However, in case a service provider gets the rebate to obtain UL, it may be adjusted against the rebate in the present case.**

16. Para 3.50

The Authority recommends that in order to create a uniformly liberalised environment with a level playing field, the Government may consider incorporating a suitable incentive package for service providers in NTP 2012 to encourage all of them to migrate immediately to the new regime envisaged above.

DOT View

This may be decided separately as it is not directly related to present auction.

Response of TRAI

Noted.

17. Para 3.55

The Authority recommends that the auction of 800 and 1800 MHz spectrum should be held through two separate auction processes and in quick sequence.

DOT View

It is subject to clarifications from TRAI on recommendation Nos. 2, 4 to 10 and 12.

Response of TRAI

Refer to clarification given against the recommendations 12, bullet 2.

18. Para 3.86

The Authority recommends that the Reserve price for the 1800 MHz spectrum shall be as given in Table no. 3.3.

19. Para 3.90

The Authority recommends that the Reserve price for the 800/900 MHz spectrum shall be as given in Table no. 3.4.

20. Para 3.93

The Authority recommends that the Reserve price for the 700 MHz spectrum shall be as given in Table no. 3.6.

21. Para 3.95

The Authority recommends that the Reserve price for the 2100 MHz spectrum shall be as given in Table no. 3.7

22. Para 3.97

The Authority recommends that the Reserve price for the 2300 MHz spectrum shall be as given in Table no. 3.8.

23. Para 3.112

The Authority recommends that the Reserve Price for spectrum in different bands shall be as given in Table no. 3.9

DOT View

TRAI has recommended reserve price for spectrum in 900 MHz and 2100 MHz bands where auction is scheduled for 2013-14 timeframe and 700 MHz as well as for 2300 MHz in 2014-15 timeframe. TRAI may clarify whether the fixing of reserve price in the above said bands be done close to

date of auction by which time the auction determined price for 800 MHz and 1800 MHz band would be available.

On reserve price of 800 MHz and 1800 MHz bands, where auction is now scheduled, TRAI may clarify the basis on which the efficiency factor and other indicators of the price has been derived, especially keeping in view the multiplication factor of 1.5 for 800/ 900 MHz bands prescribed by TRAI in its Recommendations of May, 2010 and February, 2011.

It is also observed that reserve price of 1800 MHz band is lower than that of 2100 MHz as against the trend from 2300 MHz to 700 MHz band, as seen from Table 3.9 at page nos. 115/ 116 of the Recommendation. This may also be clarified.

In addition, TRAI may clarify the following:

An elaboration of the basis for the recommendations regarding reserve price/ spectrum usage charge and whether the following aspects have been factored in while making the recommendations:

- a. Future potential of the band over a 20 year period in a liberalized spectrum environment
- b. Likely usage pattern over the short/ medium term
- c. Value of spectrum taking into account both short & long term usage
- d. Comparison with international practices in methodology adopted for fixation of reserve price and relationship between reserve price and final auction discovered price
- e. Spectrum usage charge indicated/ applicable for 3G / BWA
- f. Past experience in the sector of a staggered payment arrangement for license fee/ one time spectrum charge

- g. Likely impact on tariffs
- h. Assumptions regarding target percentage range of revenue/ operating costs that spectrum charge, both one time and usage, should account for cumulatively
- i. Likely impact on telecom penetration and consequential impact on second order economic gains to the economy from spread of telecommunications
- j. Assumptions, if any, made on balance between direct revenues from telecom and revenue gains from second order impact on economy.
- k. Appropriateness of recommending reserve price at this stage for auctions recommended to be held after 1-2 years and without awaiting outcomes of current auction process
- l. Whether there is an alternative option of fixing reserve price.

Response of TRAI

The Authority has recommended that the reserve price for 900 and 700 MHz bands should be 2 and 4 times respectively of the reserve price of 1800 MHz band. Once the auction determined price of 1800 MHz is available, the reserve price for these bands should be suitably adjusted for inflation.

The basis for determining the reserve price of 1800 MHz band has been given in Para 3.77 to 3.83.

Regarding the reserve price of spectrum in 800 and 900 MHz band, the Authority in its recommendations of May 2010, had recommended a multiplication factor of 1.5 of the current price of spectrum in the 1800 MHz band based on the comparison of projected Capex and Opex benefits. However, in the April 2012

recommendations, the Authority had considered the data relating to recent auctions globally apart from the relative requirements of Capex and Opex for these bands. As discussed in the recommendations, on the relative value of 1800 MHz and sub-1GHz spectrum, DotEcon in its report has mentioned that based on the auction data and substantiating with technical studies, the relative value of 1800 MHz and sub-1GHz should range between 45%-60%. (Para 3.87 to 3.89).

While determining the reserve price of 1800 MHz band, a multiplication factor of 0.8 was used to the final bid price of the 2100 MHz spectrum, apart from indexing the price by SBI PLR rate, because of the reasons given in Para 3.83 of the recommendations. However, in case of the reserve price of 2100 MHz, the multiplication factor of 0.8 was not applied in accordance with the stipulation given in the NIA document for auction of 3G spectrum.

In respect of 800 MHz, the amount of spectrum available for auction in some Circles is less than 5 MHz. As such, it is not possible with this spectrum, to offer all services that a truly liberalised spectrum can. Therefore, the Authority would be open to the Government fixing the Reserve price of 800 MHz spectrum at 1.3 times the 1800 MHz reserve price. This is only where 5 MHz spectrum is not being made available. The 1.3 factor is twice the value of the unliberalised spectrum in the 1800 MHz band, established by the experts (combined price of < 6.2 MHz and > 6.2 MHz in the ratio of 6.2: 1.8) which bears a ratio of 1.3 to the recommended reserve price of 1800 MHz.

Basis for Recommendation of reserve price

The reserve price for spectrum has been estimated on the basis of the perceived value of spectrum to the user. The last price of spectrum

discovered through auction was that of the 3G spectrum in the 2100 MHz band in May 2010. After adjustment for price escalation for 1 year as well as for relative efficiency, 80% of the resultant value was recommended as the reserve prices for spectrum in the 1800 MHz band. Simultaneously, the reserve prices for spectrum in other bands were also recommended, as explained in Paras 3.71 to 3.97 of the Recommendations.

The reserve prices have been finalized in the context of the recommendation to liberalise the spectrum i.e. essentially to remove technology restrictions to use of new access technologies within the same band or bands as existing and legacy technologies, thus enabling the operators to choose any technology in the spectrum bands held by them. Eliminating constraints associated with spectrum usage is expected to greatly enhance the value of the spectrum to the operators.

It is a well known fact that the future of telecommunications will centre more around data than voice. In fact, the next phase of growth in telecommunications will be marked by data revolution. While the telecom industry in the rest of the world obtains 35-50% of its revenues from non-voice services, in India the corresponding figure is only around 15%. This is however poised for a big growth in the context of spectrum liberalisation, increased availability of spectrum, increased availability and use of smart phones as well as growth in the value added services and applications. Besides, sectors such as Education, Health, finance, commerce and Governance are making increased use of telecommunications. The first two sectors involve considerable degree of non-voice services. Lastly, other content such as Gaming and entertainment will contribute to the growth in non-voice segment.

In Paras 3.98 and 3.99 of the recommendations, comparison with international practices has been made. Prices of spectrum per MHz per population in recent auctions in various countries have been indicated in Annexure-VI of the Recommendations. It has been indicated that price per MHz per population is in the range of 0.4 to 0.6 Euros in European countries and it is as high as 1 euro in an auction held in Hong Kong. As against these prices, it is seen that the price per MHz per population in the 3G auction held in India in 2010 was only 0.21 euro and the present recommended reserve price of Rs 3622.16 per MHz for 1800 MHz band works out to only 0.25 euro per MHz per population. The Authority has therefore felt that the recommended reserve price is in line with international prices.

It is clarified in response to DOT's query, that the reserve price has not been calculated on the basis of benchmark or target percentage ranges of revenue and operating cost that one time spectrum charge should account for.

However, having arrived at the Reserve Price in the manner described above, the Authority carried out an analysis to assess the impact of the price for 1800 MHz spectrum on cost per minute in the Wireless (GSM) sector. Two scenarios depicting the impact on cost per minute (including 15% return on capital) have been described in Paras 100 to 103 of the Recommendations and also reflected in Annexures VII and VIII to the Recommendations.

TRAI has also carried out an assessment, under different scenarios, of the likely impact on profitability of operations in the wireless segment of the industry. This analysis covers a time period of 20 years and takes into account the reserve price of spectrum, costs of excess spectrum held by operators and costs required to be incurred at the time of renewal of existing licences/ re-farming of spectrum in the 900 MHz band, as well as the likely savings due to the

recommended reduction of spectrum usage charges. TRAI has also studied the likely impact of the recommendations on per minute tariff, so as to assess the effect on the consumers. The analysis reveals that the recent recommendations do not adversely impact the profitability of the Wireless industry or the entry of new operators nor do they adversely affect the affordability of the consumer. The results indicate that mostly, the impact on tariff is less than 4 paise per minute and often much lower. This can be either absorbed by the service providers from the additional minutes that are generated or recovered through charges for different retail and wholesale services. The manner in which these will be recovered will vary amongst service providers depending on individual business strategies.

24. Para 3.113

The Authority recommends the following schedule for deferred payment of the bid amount by the successful bidders.

<i>Spectrum</i>	<i>Initial Payment</i>	<i>Moratorium</i>	<i>Period for balance payment</i>
<i>Supra-1 GHz (1800,2100 and 2300 MHz bands)</i>	<i>33% of the Bid amount</i>	<i>2 years</i>	<i>10 years (equal annual instalments)</i>
<i>Sub-1 GHz bands (700,800 and 900 MHz bands)</i>	<i>25% of the Bid amount</i>	<i>2 years</i>	<i>10 years (equal annual instalments)</i>

25. Para 3.114

The Authority further recommends that the annual instalments for deferred payments shall be duly securitised and the Net Present Value of the Bid amount is safeguarded by imposing a suitable rate of interest, which shall be decided by the DOT in consultation with the Reserve Bank of India/ Ministry of Finance.

DOT View

Pre-1999 experience does not favour deferred payment. Further securitisation of instalments over a 12 year period does not appear practicable.

Response of TRAI

The basis on which the DOT made the statement that securitisation of instalments over a 12 year period does not appear practicable is not clear. This Authority had made this recommendation against the background of the liquidity position in the economy as well as to

alleviate the pressure on the telecom operators even as the full value of spectrum is realised. It was recommended that the NPV of the bid amount needs to be safeguarded by imposing a suitable rate of interest, which shall be decided by the DOT in consultation with the Reserve Bank of India/ Ministry of Finance. There is no indication that any discussions have been held with either the Ministry of finance or the RBI. The Authority strongly urges the DOT to explore the option rather than peremptorily brushing aside the recommendation. While the Authority does not have an intimate knowledge of the Pre-1999 experience, it believes that the telecom industry has come a long way since then.

26. Para 3.117

The Authority recommends that the sequence of spectrum auction could be as follows:

- (a) 5 MHz of 1800 MHz band- This auction would be to establish the market value of spectrum. This could be done in the current year 2012-13 as early as possible.*
- (b) Allocation of additional 1.25 MHz spectrum to the holders of 4.4 MHz in 1800 MHz bands, subject to the legal opinion.*
- (c) Auction of spectrum in the 800 MHz band- This should also be done in the current financial year.*
- (d) Auction of spectrum in the 900 MHz band- This auction should be conducted in the first half of 2013-14 preferably in the first quarter so that there is adequate time for deployment as and when 900 MHz spectrum is available by November, 2014.*
- (e) Balance Spectrum in 1800 MHz band- This should be done in the first half of 2013-14*
- (f) Auction of Spectrum in 2100 MHz band - This should also be carried out in the second half of 2013-14.*
- (g) Auction of available spectrum in 700 MHz band- This should be carried out in the first half of financial year 2014-15.*
- (h) Auction of additional spectrum in 2300 MHz band- This should be carried out in the second half of financial year 2014-15.*

DOT View

Feasibility of auction in bands other than 800 and 1800 MHz as per the time schedule requires consideration of various parameters such as availability of spectrum, re-farming, modalities of auctions, policy prescriptions and the prevailing eco-system etc.

Response of TRAI

The Authority holds the view that a public knowledge of the schedule of auctions for all bands would help all intending bidders to prepare themselves with the respective business plans and, in the process, enable better participation and therefore a better price spectrum.

When the Authority gave its recommendations on 23rd April 2012, its information was that the Department of Telecommunications had filed a petition before the Hon'ble Supreme Court indicating the requirement of a 400 day time-line for the conduct of auctions. However, on 24th April 2012, the Hon'ble Supreme Court ordered that the auctions should be conducted by end of August 2012. In the light of this, the authority would like to suggest that the balance spectrum in 1800 MHz band, which was earlier suggested to be auctioned in the first half of 2013-14, may now be auctioned after the auction of spectrum in 800 MHz band during the current financial year.

27. Para 3.118

The Authority recommends that the Department of Telecommunications should engage an auctioneer for a period of three years so as to conduct the auctions without delay.

DOT View

Since the price payable to the auctioneer depends on the quantum of spectrum likely to be auctioned, it may not be possible for engaging of the auctioneer for long periods. Auctioneer has to be engaged only after the spectrum blocks are identified on a case to case basis.

Response of TRAI

Based on the information given by the WPC wing of DoT, the Authority has already indicated the quantum of the spectrum likely to be auctioned in various bands. It is assumed that the information given by the WPC is correct and therefore, the Authority reiterates its recommendation that the DoT should engage an auctioneer for a period of three years so as to conduct the auctions without delay.

28. Para 3.125

The Authority recommends that mortgage of spectrum may be allowed by spectrum holders to a registered Indian financial institution against borrowings. The mortgage will be subject to the condition that in the event of default of the liability, the spectrum shall be auctioned by the financial institution under the supervision of the DOT and all proceeds in excess of the liability shall be remitted to the Government.

DOT View

At present, a tripartite agreement executed between the Licensor, Licensee and the lender facilitates the borrowings by Licensee Company. The prospects of mortgage of spectrum need to be examined legally as to the nature of property rights acquired by the licensee, its mortgability, etc. This needs to be examined by Ministry of Law and Ministry of Finance.

TRAI may also like to give their views on the above.

Response of TRAI

The Authority believes that the ability to mortgage spectrum is important element of the package recommended by the Authority. There cannot be two opinions that the proposal needs to be examined by the Ministry of Law and Ministry of Finance. In fact, it is to be examined also by the Reserve Bank of India. The Authority recommends that this examination should be done expeditiously. While doing so, it may also be examined whether the scope can be extended to mortgaging with foreign institutions, with adequate safeguards. Since the Authority was not sure of the ramifications in respect of foreign financial institutions, this recommendation was restricted to mortgaging of spectrum to Indian financial institutions.

30. Para 3.141

Therefore, the Authority reiterates its recommendation regarding rural roll-out obligations as spelt out in 3rd Nov, 2011 recommendations and that the measures contained therein should be made applicable to all spectrum holders.

DOT View

This recommendation regarding rural roll out obligations was considered by Telecom Commission and it was decided that a comprehensive techno-economic study may be carried out to examine issues relating to increase in coverage and tele-density in rural areas while at the same time ensuring sustained quality of service and to examine the adequacy of USOF mechanism alone to achieve these objectives. The roll out obligation can be decided after the study is completed.

In addition, TRAI may clarify on the following:

Basis for recommendations on roll-out obligation, issues involved in combining this obligation with existing obligation for incumbent operators, implications of such an obligation in combination with auction methodology for all successful bidders, combination of incentives and disincentives envisaged for rural rollout and potential impact on auction outcomes and rural penetration.

Response of TRAI

The Authority in its recommendations of May 2010 (Paras 2.134 to 2.142) and subsequently in its recommendations of November 2011 has examined all the issues mentioned by the DoT and has recommended the modified roll out conditions along with incentives in the form of reduction in USOF component in the annual licence fee. The Authority is of the view that as the spectrum will be auctioned for 20 years and the bidders will be bound only by the

conditions stipulated in the auction tender document, mandating roll out obligations on the successful bidders, subsequently may not be legally feasible.

31. Para 3.154

The Authority recommends that

A. Licensees who have acquired spectrum only through auction conducted here onwards shall be levied spectrum usage charge only at the rate of 1% of the Adjusted Gross Revenue spectrum.

B. Licensees who have a mix of spectrum assigned administratively and spectrum acquired through auction and Licensees who have been assigned spectrum only through administrative process shall be levied the spectrum Usage charges at the rate applicable on the administratively assigned spectrum and on the entire AGR.

C. In the event the spectrum holder, who falls under „B“ above pays the current auction determined price for the spectrum that is administratively assigned, then it will be entitled to the payment of Spectrum usage charges at the rate of 1% of the AGR.

DOT View:

TRAI may provide rationale for recommending 1% SUC whereas 3% was prescribed in case of 3G, which was also based on auction process.

Clarity on “Adjusted Gross Revenue Spectrum” is required.

In relation to Spectrum Usage Charge for mix of spectrum assigned administratively and spectrum acquired through auction, whether the spectrum acquired through auction will be added or will not added, with spectrum assigned administratively for determining the applicable slab rates. TRAI may clarify.

TRAI may also clarify how to determine the “current auction determined price” for cases falling under (C) at the time of liberalisation of spectrum.

In this regard, TRAI may be requested to indicate the period of validity of auctioned determined price.

Response of TRAI

In Para 3.152 of the recommendations, the Authority has observed that “The Authority is of the view that once spectrum is obtained through an open auction, the other charges should not have any further element of collecting the rent for assignment of spectrum. Any such charge should be only to cover the administrative costs attendant with resource management. As all spectrum in future shall be acquired through auction, the Authority would like the Spectrum Usage Charges to be minimal at 1% of the Adjusted Gross Revenue. The guidelines for Unified Licence already stipulate that only the revenue accrued through wireless services shall be taken into consideration for the purpose of levy of Spectrum Usage charges.”

However, in view of the following reasons, the Authority has reconsidered the above recommendations.

- (i) As per the analysis of the financial implications on account of reduction in the SUC to 1% the amount of savings on account of 1% SUC will be around 68% of the total amount of the renewal fees which will be paid by the entire industry. However, if the SUC is fixed at 3% instead of 1%, this figure reduces to around 31%, which still gives a reasonable discount. This will not have any adverse effect on the impact.**

S.No	Particulars	Amount	SUC@1%	SUC@2%	SUC@
1	NPV -	55199			
2	NPV- Savings		37371	27348	17325

- (ii) Secondly, the holders of the 3G spectrum are liable to pay minimum spectrum charges @3% of AGR. Since it is not feasible to segregate the revenues earned from spectrum in the 800/900/1800 MHz band and 3G spectrum, there can be a situation where operators also holding 3G spectrum, migrate from spectrum usage charge of 3% or more to 1% of AGR. Besides possible risk of arbitrage, it may be construed as changing the NIA conditions.

In view of the above, the Authority is in favour of modifying the recommendation in Para 3.154 and retaining the levy of Spectrum usage Charge (SUC) at 3% instead of 1%. All the other conditions regarding the SUC will remain same.

The term “Adjusted Gross Revenue Spectrum” may be read as “Adjusted Gross Revenue”.

It is mentioned in Para 3.153 that “In respect of licensees who have a mix of administratively assigned spectrum and spectrum acquired through auction, the principle for levy of Spectrum usage charges shall be on lines similar to the 3G spectrum i.e., the spectrum holder will continue to pay the SUC as applicable on the spectrum acquired through administrative process. However, in their case, the AGR will

be the total AGR earned through spectrum acquired through auction and administratively acquired spectrum.”

In case there is price available for spectrum in the same band through auction conducted in last one year period, that price will be the “Current auction determined price’ for applying for liberalisation of spectrum. In case the period is more than one year, the auctioned determined price shall be suitably adjusted to the inflation index.

32. Para 3.157

The Authority recommends that for the purpose of calculation of the Licence fee as well as SUC, there shall be a Minimum AGR, which shall not be less than 5% of the Bid amount. The calculation will be on the basis of Minimum AGR or the actual AGR, whichever is higher.

DOT View

In The UL recommendations, the TRAI has recommended that licensee fee shall be subject to minimum of 10% of the entry fee paid. This recommendation is contradictory so far as license fee is concerned and this needs clarification.

Response of TRAI

TRAI recommendation that the licensee fee shall be subject to minimum of 10% of the entry fee paid was in respect of Unified Licensees without having spectrum. However, the present recommendations are with respect to the licensees who have acquired spectrum through auction. Therefore, there is no contradiction in the two recommendations.

34. Para 3.186

Therefore, the Authority recommends that Spectrum trading should be allowed between spectrum holders having obtained spectrum through auction or having paid the auction determined price for the spectrum held by them, only for the limited purpose of frequency configuration (arranging spectrum in a contiguous band).

DOT View

The word 'Trading' has specific connotation for which no policy is available and issues as raised in recommendation 28 would also arise, therefore, keeping in view the purpose behind the recommendation, the 'spectrum reconfiguration' may be permitted as per prescribed procedure, within the same band. Frequency configuration should be done with approval of WPC Wing. TRAI may confirm.

TRAI may confirm whether such arrangement of reconfiguration is available for the operator in Scenario 'B' in recommendation 31?

TRAI may clarify whether under such reconfiguration any fees/ charges are payable to the government?

Response of TRAI

Regarding the availability of the option of reconfiguration of frequencies in the same band to operators in scenario B in recommendation 31, it is clear from the recommendations that this will be allowed only between spectrum holders having obtained spectrum through auction or having paid the auction determined price for the spectrum held by them.

In case of frequency reconfiguration between two spectrum holders, no fees/charges shall be payable to the Government.