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STANDING COMMITTEE ON INFORMATION TECHNOLOGY (2014-15)

SIXTEENTH LOK SABHA

MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY (DEPARTMENT OF TELECOMMUNICATIONS)

[*Action Taken by the Government on the Observations/Recommendations of the Committee contained in their Fifty-third Report (Fifteenth Lok Sabha) on 'Norms for setting up of telecom towers, its harmful effects and setting up of security standards in expansion of telecom facilities'*]

THIRTEENTH REPORT

LOK SABHA SECRETARIAT
NEW DELHI

August, 2015/Shravana, 1937 (Saka)

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Presented to Lok Sabha on 13 August, 2015
Laid in Rajya Sabha on 13 August, 2015

LOK SABHA SECRETARIAT
NEW DELHI

August, 2015/Shravana, 1937 (Saka)

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ANNEXURES

*Not appended with the cyclostyled copy.

COMPOSITION OF THE STANDING COMMITTEE ON INFORMATION TECHNOLOGY (2014-15)

Shri Anurag Singh Thakur - Chairperson

Lok Sabha

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* 5. Dr. K.C. Patel
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19. Shri Ramdas C. Tadas
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@21. Shri Raosaheb Danve Patil

Rajya Sabha

22. Shri Javed Akhtar
23. Shri Salim Ansari
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27. Shri Derek O'Brien
28. Dr. K.V.P. Ramachandra Rao
29. Shri Sachin Ramesh Tendulkar
30. Mahant Shambhuprasadji Tundiya
31. Shri Meghraj Jain

Secretariat

1.	Shri K. Vijayakrishnan	Additional Secretary
2.	Shri J. M. Baisakh	Director
3.	Dr. Sagarika Dash	Deputy Secretary
4.	Shri Shangreiso Zimik	Under Secretary

* Nominated to the Committee w.e.f. 11.09.2014 *vice* Shri Feroze Varun Gandhi, M.P., *vide* Bulletin Part – II w.e.f. 11.09.2014.
@ Nominated to the Committee w.e.f 15.07.2015 vide Bulletin Part-II dated 17.07.2015
# Nominated to the Committee w.e.f. 14.01.2015 *vide* Bulletin Part – II dated 16.01.2015.

INTRODUCTION

I, the Chairperson, Standing Committee on Information Technology (2014-15) having been authorized by the Committee, do present this Thirteenth Report on Action Taken by the Government on the Observations/Recommendations of the Committee contained in their Fifty-third Report (Fifteenth Lok Sabha) on 'Norms for setting up of telecom towers, its harmful effects and setting up of security standards in expansion of telecom facilities' of the Ministry of Communications and Information Technology (Department of Telecommunications).

2. The Fifty-third Report was presented to Lok Sabha/laid on the Table of Rajya Sabha on 12th February, 2014. The Department of Telecommunications furnished their Action Taken Notes on the Observations/Recommendations contained in the Fifty-third Report on 24th October, 2014.

3. The Report was considered and adopted by the Committee at their sitting held on 11th August, 2015.

4. For facility of reference and convenience, Observations/Recommendations of the Committee have been printed in bold in Chapter-I of the Report.

5. An analysis of Action Taken by the Government on the Observations/Recommendations contained in the Fifty-third Report of the Committee is given at Annexure-II.

New Delhi;
11 August, 2015
20 Shravana, 1937 (Saka)

ANURAG SINGH THAKUR,
Chairperson,
Standing Committee on
Information Technology.

CHAPTER I

REPORT

This Report of the Standing Committee on Information Technology deal with the action taken by the Government on the Observations/Recommendations of the Committee contained in their Fifty-third Report (Fifteenth Lok Sabha) on the subject 'Norms for setting up of telecom towers, its harmful effects and setting up of security standards in expansion of telecom facilities' relating to the Ministry of Communications and Information Technology (Department of Telecommunications).

2. The Fifty-third Report was presented to Lok Sabha/laid in Rajya Sabha on 12th February, 2014. It contained 21 Observations/Recommendations.

3. Action Taken Notes in respect of all the Observations/Recommendations contained in the Report have been received from the Department of Telecommunications and are categorized as under:-

(i) Observations/Recommendations which have been accepted by the Government
Para Nos.:- 1, 2, 3, 4, 5, 6, 7, 8, 9, 11,12, 15, 16, 18, 19 and 20

(ii) Observations/Recommendations which the Committee do not desire to pursue in view of the replies of the Government
Para No.:- Nil

(iii) Observations/Recommendations in respect of which replies of the Government have not been accepted by the Committee and which require reiteration
Para Nos.:- 13 and 14

(iv) Observations/Recommendations in respect of which the replies of the Government are of interim in nature
Para Nos.:- 10, 17 and 21

4. In their Fifty-third Report (Fifteenth Lok Sabha), the Committee undertook a comprehensive examination of the subject 'Norms for setting up of telecom towers, its harmful effects and setting up of security standards in expansion of telecom facilities'. The examination of the subject by the Committee had revealed serious shortcomings/lapses on the part of the Department which *inter-alia* included lack of uniform, enforceable guidelines in setting up of towers and mandatory standards for structural safety of towers, restriction in setting up of towers in residential areas, schools, colleges and hospitals, non-existence of effective Grievance Redressal

Mechanism, need for India specific Research, supply of sub-standard mobile handsets by reputed global manufacturers, lack of standards for mobile handsets, lack of manpower and equipment in TERM Cells, relying on dubious method of 'Self-certification' of BTS by TSPs, delay in setting up of security lab for testing of telecom equipment, etc. A majority of the recommendations of the Committee have been accepted by the Government and are at different stages of implementation.

5. The Action Taken Notes furnished by the Ministry of Communications and Information Technology (Department of Telecommunications) to each of the observations/Recommendations of the Committee contained in their Fifty-third Report have been reproduced in the relevant chapters of this Report. The Committee trust that utmost importance will be given on implementing the Observations/Recommendations accepted by the Government. In cases where it is not possible for the Department to implement the Recommendations in letter and spirit for any reason, the matter should be reported to the Committee with reasons for non-implementation. The Committee further desire that Action Taken Notes on the Observations/Recommendations contained in Chapter-I and Final Action Taken Replies to the Observations/Recommendations contained in Chapter-V of this Report should be furnished to them at an early date.

6. In their Original Report, the Committee will now deal with action taken by the Government on some of their Observations/Recommendations.

A. <u>Structural Safety for setting up of telecom towers</u>

(Recommendations Sl. No. 4)

7. The Committee had recommended as under:-

> "The Committee have been informed that many of the mobile towers have been erected in the country without ensuring safety of the buildings and even without taking any permission from the local bodies thereby posing a great risk to the buildings as also the residents living nearby. The Secretary, Department of Telecommunications, also admitted during evidence before the Committee that safety aspects of telecom infrastructure like towers is an area of concern. The Committee are

perturbed to find that such an important issue has been given a very scant attention both by the Central as well as State Governments. While strongly deprecating this kind of approach, the Committee note that the Telecom Engineering Centre (TEC) of the Department of Telecommunications has developed 12 standards concerning structural safety and design parameters of telecom towers using codes/specifications by Bureau of Indian Standards (BIS). The Committee, however, are dismayed to find that these standards have not been made mandatory for Telecom Service Providers. The Committee are not at all convinced with the justification given by Secretary, DoT, during evidence before the Committee, that since structural safety is the domain of State, the Department does not want to venture into the area. Instead of ensuring that standards developed by TEC are strictly adhered to, the revised guidelines issued by DoT regarding States to secure Structural Stability Certificate from authorized structural Engineer of State/Local bodies/Central Building Research Institute (CBRI), Roorkee/IIT/NIT or any other agency authorized by local body. The Committee recommend that for the purpose of avoiding any ambiguity in this regard, the Central Government may finalise a specific list of institutes of excellence and repute belonging to Central Government/State Governments and also autonomous organization/Institutes funded by the Central/State Governments. The Committee also recommend that it should be made mandatory for all TSPs to scrupulously follow uniform norms concerning structural safety of telecom towers across the entire country and adequate mechanism must be put into place for ensuing strict compliance of the same. Further, all such towers which do not adhere to the norms should be removed immediately. The Committee also desire that to deter installation of towers not conforming to the safety norms, stringent penalty provisions must be imposed on the service providers."

Replies of the Government

8. The Department of Telecommunications in their Action Taken Notes have stated as under:-

"Telecom Engineering Centre (TEC) has developed standards concerning structural safety and design parameters of telecom towers using codes/specifications by Bureau of Indian Standards (BIS). The matter is under consideration for making TEC standards mandatory for implementation by TSPs.

TEC is also developing Generic Requirements (GR) for 20/30/40 Meter Guyed Masts exclusively for deployment in hilly areas. TEC is processing the case for taking up with Structural Engineering Research Centre (SERC), Chennai for vetting the structural safety before draft GR can be circulated to stakeholders for comments and consideration of Departmental Co-

ordination Committee. It is expected that the GR will be ready by December 2014.

Department of Telecom through its advisory to the State Governments has already suggested CBRI, IIT Roorkee, Other IITs and NITs, as also mentioned in the Recommendation of the Committee. Further, it has been mentioned in the same letter that Local bodies may also authorise agencies for this purpose. Since regulation of structure of buildings/ installations lies in the domain of Local bodies, designation of any additional institution/agency can be done only by them."

9. In their Original Report, the Committee had observed that safety aspects of telecom infrastructure like towers is an area of concern and even though the Telecom Engineering Centre(TEC) of the Department of Telecommunications has developed 12 standards concerning structural safety and design parameters of telecom towers, these standards had not been made mandatory for Telecom Service Providers(TSPs). The Committee had, therefore, recommended that it should be made mandatory for all TSPs to scrupulously follow uniform norms concerning structural safety of telecom towers and steps be taken for immediate removal of towers which do not adhere to the norms and stringent penalty be imposed on those not conforming to safety norms. The Committee note from the Action Taken Note that the matter is still under consideration for making TEC standards mandatory for implementation by TSPs. The Committee desire that the Department should expedite examination of the issue for taking a final decision in the matter. Further, on the issue of securing Structural Stability Certificate from authorized structural Engineer, the Committee had recommended that the Central Government may finalise a specific list of Institutes of excellence and repute belonging to Central Government/State Governments and also autonomous organizations/Institutes funded by the Central/State Governments to ensure structural safety of towers. The Committee note that the Department have issued an advisory to State Governments to engage professional institutes to oversee the structural safety of towers. The Committee feel that mushrooming of a large number of telecom towers without any prescribed norms and procedures concerning structural safety needs to be taken seriously, since this has serious implications for public safety in case of any disaster. The Committee, therefore, exmphasize that the

Central Government should continue to impress upon the State Governments to take the help of professional institutes, as suggested by the Committee so that structural safety of telecom towers is adequately taken care of. The Department may keep the Committee informed of the progress made in this regard.

B. Issues related to health hazards from EMF Radiation and Need for India specific long term Research

(Recommendation Sl. Nos. 6 & 9)

10. The Committee in their Original Report had recommended as under:-

> "The Committee note with concern that the Government had not adopted or prescribed any standards relating to safe exposure from electromagnetic radiations emitted by the mobile towers as well as the mobile handsets and it was only in the year 2008 that the Department of Telecommunications adopted the standards prescribed by the International Commission for Non-Ionizing Radiation Protection (ICNIRP) although the same were in existence since 1998. These norms are a kind of international safety guidelines for RF exposure. Thereafter, based on the growing media reports and increasing public concern on the possible health hazards of EMF emission from antenna(e) of telecom towers/networks, an Inter- Ministerial Committee (IMC) was constituted by the Government in August, 2010 to examine the effect of EMF Radiation from Base Transmission Stations (BTSs) and mobile phones. Based on the recommendations of the IMC, in respect of BTSs, exposure limit for Base Station Emissions was subsequently reduced to 1/10th of the limits prescribed by ICNIRP with effect from 01.09.2012, which according to the various memoranda received by the Committee has still failed to allay the fear amongst the public who have cited various kinds of health hazards to human beings, animals, flora and fauna from the EMF emission of telecom towers.
>
> During the course of the examination of the subject, the Committee found two contradictory views on ill effects of EMF emissions from telecom towers and mobile handsets on humans and wildlife. The Committee note that on one side, various organizations/ stakeholders, such as, Association of Unified Telecom Service Providers of India (AUSPI), Cellular Operators Association of India (COAI), Reliance Communications Limited, Vodafone India Limited, European Business Group etc., have denied the harmful effects of EMF radiations from mobile towers and mobile handsets and also contended that sufficient precautionary measures have been put in place. On the other side, various studies including Bioinitiative Report of 2012 have linked several adverse health effects to electromagnetic fields from mobile tower and handsets including effects on wildlife like birds,

bats, honey bees, etc. Some of the health effects reported are effect on cell growth, cell differentiation, DNA damage, altered immune system, hormonal effects, pervasive impairment of metabolic and reproductive system, effect on fertility, reproduction and health of off-springs, risk of glioma (a malignant brain tumour), sleep disorders, confusion, anxiety and depression and appetite disturbance, etc. The Department of Telecommunications has cited a World Bank Report of May, 2006 which has concluded that considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that the weak RF signals from base stations and wireless networks caused adverse health effects. In this regard, the Committee feel that the Department is selectively relying on the research findings which have concluded that there is no health effects of EMF from telecom towers/networks while ignoring host of other reliable research and concerns made which have proved to the contrary. Considering the seriousness of the matter which concerns the citizens of the country, the Committee recommend that Government should entrust the scientific study on impact of Telecom towers and handsets on humans to a reputed Government organization in a time bound programme. Till such time Government should strictly enforce EMF radiation norms finalized in September, 2012 which are reportedly 1/10th of ICNIRP prescribed norms."

(Recommendation No. 6)

The Committee note that all the standards of radiation limit which the government has chosen to follow are based on the researches conducted in western countries where conditions are very different from countries like India. Some of the specific differences between western countries and India are low population density, cold climatic conditions, low density of mobile phone towers etc. The Committee also note that DoT has acknowledged that some of the India specific conditions, such as, multi-operator scenario, mobile phone usage, higher population density etc., have been conveyed to WHO for their considerations in carrying out with India specific research. Against this backdrop, the Committee are not convinced with contention of DoT that none of the studies done under the aegis of the WHO had proved that the emissions from the mobile phone towers/networks are causing harmful effect on human beings as the same are not based on India specific research. The Committee find it deplorable that some of the India specific research carried out by eminent scientists and other Governmental organisations have not been taken into consideration by DoT in forming its guidelines. For instance, a 10 year study conducted by Prof. Gandhi of Department of Genetics, Guru Nanak Dev University, Amritsar has found that radiations emitted from the towers are degenerating DNA and chromosomes. Similarly, a study conducted by Prof. Jitendra Behari in Jawaharlal Nehru has found that the exposure to radiation from mobile towers and mobile phones could have

an adverse impact on male fertility and deplete the defense mechanism of cells. Also the Environment and Forest Ministry study has blamed electromagnetic radiation from communication towers for the declining number of sparrows and bees, etc. The Committee, in view of the above findings made by the reputed experts and research institutes, feel that there is no room for complacency on the issue by selectively relying only on the findings of WHO whose research reports are mainly based on developed countries and strongly recommend that the findings of India specific studies should also be taken into consideration by DoT in coming out with its policy initiative on mobile towers.

The Committee also note that the main challenge involved in conducting studies on radiation hazards from mobile towers and mobile handsets is the requirement of very long period of scientific research on targeted population and the lack of established standard procedures and protocols to study and monitor the EMF impacts on humans and wildlife. The Committee are , however, concerned to note that in spite of exponential growth of mobile telephony in the country over the last decade, no efforts have been made by the Department to undertake a continuous or long term research on the issue. It is rather surprising to note that even though the Department of Telecommunications is the nodal Department for all telecommunication related issues, it is only the Department of Science and Technology which on the direction of Prime Minister's Office has constituted a Committee under Dr. N.K. Ganguly, former Director General (ICMR) on 1.10.2012 to examine the harmful effects from Mobile towers on the population living in the vicinity and for developing the frame of reference for calling out Request For Proposals (RFPs) for scientific assessment of health hazards and adverse impact on ecology. The Committee feel that DoT should be more sensitive and proactive in discharging its prime responsibility on such critical matters. The Committee, therefore, strongly recommend that the DoT must wholeheartedly associate itself with such long term research works being carried out within the country and also make regular budgetary allocation under a separate budget head of expenditure for research on health hazards from EMF radiation.

(Recommendation No. 9)

Replies of the Government

11. The Department in their Action Taken Note have stated as under:-

"As has been brought out in response to recommendation no 1 above, extensive research has been carried out on the subject of health effects from EMF radiation. WHO has clearly stated that in the area of biological effects and medical applications of non-ionizing radiation approximately 25,000 articles have been published over the past 30 years. Despite the

feeling of some people that more research needs to be done, scientific knowledge in this area is now more extensive than for most chemicals. Based on a recent in-depth review of the scientific literature, the WHO concluded that current evidence does not confirm the existence of any health consequences from exposure to low level electromagnetic fields. However, some gaps in knowledge about biological effects exist and need further research.

The Committee on Man and Radiation (COMAR) is a technical committee of the Engineering in Medicine and Biology Society (EMBS) of the Institute of Electrical and Electronics Engineers (IEEE), an international standard making body. COAMAR is primarily working in the area of biological effects of non-ionizing electromagnetic radiation, including radiofrequency (RF) energy. With regard to Bio-Initiative report 2007, COMAR submitted a statement in 2009 titled - "COMAR Technical Information Statement: Expert reviews on potential health effects of radiofrequency electromagnetic fields and comments on the Bio Initiative Report". Extract of this statement is as below:

"*This report summarizes the conclusions from several major reports and comments on the markedly different conclusions in the Bio Initiative Report (abbreviated BIR* below*). Since appearing on the Internet in August 2007, the BIR has received much media attention but, more recently, has been criticized by several health organizations (see Section titled "Views of health agencies about BIR"). COMAR concludes that the weight of scientific evidence in the RF bio effects literature does not support the safety limits recommended by the Bio Initiative group. For this reason, COMAR recommends that public health officials continue to base their policies on RF safety limits recommended by established and sanctioned international organizations such as the Institute of Electrical and Electronics Engineers International Committee on Electromagnetic Safety and the International Commission on Non-Ionizing Radiation Protection, which is formally related to the World Health Organization*."

Further, it is also noted that Indian Council of Medical Research (ICMR), on critical examination of the Bio-initiative 2012 Report, has observed that the report is not based on multi disciplinary weight and there is no balanced reflection of the current state of scientific knowledge. However, further study is needed to arrive at a conclusion about the potential health effects of EMF radiation.

India specific scientific research by Indian Scientist / Engineers keeping in view Indian environment and conditions are being carried out and till the time conclusive data from these researches becomes available, we have to rely on research done by reputed international agency like WHO, ICNIRP

etc. These agencies have already carried out extensive research on the subject as has been brought out above. However, Department of Science & Technology (DST), Government of India, is already working on conducting study on possible impact of EMF Radiation exposure from mobile tower and handset on life (humans, living organism, flora & fauna and environment) and related initiatives. Based on the recommendation of the Committee headed by former Director General (ICMR), representative from IIT Chennai, Indian Institute of Toxicology Research, Lucknow, Department of Telecom, Ministry of Environment & Forest, ICMR and DST, Science and Engineering Research Board (SERB) invited R&D proposals in June, 2013 on the possible impact of EMF radiation exposure from mobile towers and handsets on life (humans, living organism, flora & fauna and environment) and related initiatives from Eligible Scientist/Organizations-public or private, individually or in collaboration. The SERB has constituted an Expert Committee / Task Force on 04 September 2013 to evaluate, R&D proposal to study the possible impact of EMF Radiation exposure from mobile tower and handset on life (humans, living organism, flora & fauna and environment) and related initiatives. SERB has short listed 79 proposal for carrying out scientific studies. Thus, India specific scientific research by Indian Scientist / Engineers keeping in view Indian environment and conditions are being carried out and conclusive data from these researches will also become available in future."

(Reply to Recommendation No. 6)

The EMF project of WHO has been conducting research on effects of EMF Radiation on human health since 1996. This project has participation from over 50 countries. It is pertinent to note that many of these studies have been going on for years as to understand the effect of EMF over the period of time. Thus these studies are not specific to developed countries alone. WHO has referred to approximately 25,000 articles published around the world over past 30 years, and based on an in-depth review of scientific literature, has concluded: "current evidence does not confirm the existence of any health consequences from exposure to EMF radiation". Since the effects on human beings are to be studied over a long period of time, further studies are going on around the world.

As has been given in Action taken report to recommendation no. 6 above, India specific scientific research by Indian Scientist/Engineers keeping in view Indian environment and conditions are being carried out and conclusive data from these researches will also become available in future. Till the time conclusive data from these researches becomes available, research done by reputed international agency like WHO, ICNIRP, etc. are to be relied on.

(Reply to Recommendation No. 9)

12. The Committee, in their original Report, had expressed their concern that while prescribing the limits to safe exposure from electromagnetic radiations emitted by mobile towers and mobile handsets, the Department had selectively relied on researches conducted in the western countries which have conditions very different from countries like India, such as low population density, cold climatic conditions, low density of mobile phone towers, etc., ignoring some of the India-specific conditions like multi operator scenario, mobile phone usage, higher population density, etc. The Committee note that for India-specific studies, the Department of Science and Technology (DST) are working on conducting a study on the possible impact of EMF radiation exposure from mobile towers and handsets on life (humans, living organism, flora and fauna and environment) and related initiatives. Towards this end, the Science and Engineering Research Board (SERB) has invited proposals on the possible impact of EMF radiation exposure from mobile towers and handsets and shortlisted 79 proposal for carrying out scientific studies. The Committee are of the view that India-specific research on the subject has become very important, mainly because the standards of radiation limit which the Government have chosen to follow are based on researches conducted in western countries and some of the India-specific research carried out by eminent scientists and other Governmental organizations - which have found adverse impact of EMF - have not been taken into consideration by DoT. Taking into cognizance the initiative taken for carrying out India-specific scientific research by Indian scientists/engineers which will provide valuable feedback on the impact of EMF radiation, the Committee emphasize that DoT should promote and encourage the research works being carried out in the country, including by providing appropriate budgetary support.

C. <u>Supply of sub-standard mobile handsets to India by reputed global manufacturers</u>

(Recommendation Sl. No. 13)

13. The Committee in their Original Report had recommended as under:-

> "The Committee note from a memorandum submitted to them by an expert of the field that more than 90 per cent of the mobile handsets are

being supplied in India by reputed global manufacturers like Nokia, Samsung, Blackberry etc. While these reputed global manufacturers are strictly complying with all the prescribed safety limits when supplying the mobile handsets to countries like USA, Japan and European Countries, they are resisting the prescribed norms when it comes to supplying mobile handsets to India, probably taking the country for granted. From the response of DoT, the Committee feel perturbed to find that no standards for mobile handsets have so far been prescribed in the country and the same are still under deliberation of a Technical Committee of the Bureau of Indian Standards (BIS). The Committee have been informed that even the standards which have been finalized by TEC have not been implemented. The Committee are unable to understand the reasons for the delay in formulation of standards for mobile handsets in the country which in the opinion of the Committee is an issue of paramount importance in ensuring standardization and quality control of mobile handsets being imported or manufactured in the country. The Committee while deprecating such sorry state of affairs prevailing in the country, strongly recommend that DoT must make all possible efforts in finalizing and implementing the standards for mobile handsets without any further loss of time and the Committee must be apprised of the progress made in this regard."

Reply of the Government

14. The Department in their Action Taken Note have stated as under:-

"Telecom Engineering Centre has finalized the standards for mobile handsets. Further an amendment to Indian Telegraph Act, has been proposed to give statutory backing to the provisions."

15. The Committee note that the reply of the Government with regard to prescribing standards for mobile handsets in the country is the same as the reply furnished earlier during the examination of the subject and there is absolutely no progress in the matter. It is a matter of serious concern that, so far, no standards for mobile handsets have been prescribed in the country. The Committee are constrained to note that at a time when there is massive expansion of mobile telephony, only an amendment to the Indian Telegraph Act to give statutory backing to the standards developed for mobile handsets by TEC has been proposed by the Department. The Committee are of the view that the issue of standards for mobile handsets has become pressing not only because of the existence of millions of mobile users, but also because of the apparent reluctance and resistance of reputed global

manufacturers to adhere to the prescribed safety limit when it comes to supplying mobile handsets to India while scrupulously adhering to all safety standards when supplying the same to US, Japan and European countries. While deploring the slow progress made in this regard, the Committee urge the Department to take all necessary steps in finalizing and implementing the standards for mobile handsets without any further delay.

D. Need for effective Grievance Redressal Mechanism

(Recommendation Sl. No. 14)

16. The Committee in their Original Report had recommended as under:-

> "The Committee note with concern that as the things stand today, the Grievance Redressal Mechanism available to the public in respect of EMF radiation from mobile towers located in their immediate vicinity is either totally insufficient or non-existent. The public has no means to verify as to whether the radiation from towers to which they are being exposed continuously is within the prescribed limits and whom to approach to allay their fears as no such details are required to be mentioned at the tower site. The Committee note that the only existing Complaint Handling System for Electro Magnetic Field (EMF) Radiation from Mobile Towers has been launched by DoT in Mumbai on 4th October, 2012 through an online facility on DoT website http://www.dot.gov.in and there is a proposal to extend this facility to other metros also. The Committee, however, note that even after the lapse of more than one year, the facility has not been extended to any other metro. Further, no publicity has been given with respect to online complaints redressal mechanism. No wonder that most of the people are not aware of existence of such a mechanism. The Committee strongly feel that above grievance redressal mechanism of the Department is too little, too inadequate and is akin to making a deliberate attempt to ring fence the TSP and Infrastructure Providers from any public complaints and grievances. Holding the DoT squarely responsible for the absence of any effective mechanism for redressal of public grievances, the Committee recommend that urgent efforts should be made to extend "Complaint Handling System for Electro Magnetic Field (EMF) Radiation' to other metros of the country along with an aggressive campaign to make the public aware of the existence of such Complaint Handling System. The Committee further recommend that the suggestion to display the information regarding name and address of the operators, contact person details, address of complaint redressing authority, level of EMF radiation etc. at the entry point of the facility of the tower, which is

being examined by DoT in consultation with telecom service providers and infrastructures providers, should be finalized and implemented at the earliest. The Committee, at the same time, feel that such consultation process would be more meaningful if members of the public forum, Resident Welfare Associations, NGOs etc. are also consulted in evolving an effective Grievance Redressal Mechanism."

(Recommendation No. 14)

Reply of the Government

17. The Department in their Action Taken Note have stated as under:-

"The online complaint handling system for Mumbai was launched by DoT on 04.10.2012. It was envisaged that based on the response received for online complaint handling system of Mumbai, the facility may be extended to 3 other metros also. However, the total no of monthly complaints booked, for which the testing fee has been realized, on the online complaint handling system for Mumbai has reduced drastically from 135 in October 2012 to 13 in February 2014. Considering the small no of complaints being received the facility has not been extended to other metros. However, there are other mechanisms also for quick and effective redressal of public grievances, which include online booking of complaint on CPGRAMS web portal which are attended by TERM Cells. TERM Cells also carry out testing of EMF radiation acting on the complaints received directly by general public. In addition TERM Cells are testing up to 10% of the total BTSs annually for compliance to the DoT norms for EMF radiation. Apart from this a National EMF portal is also under process of development which will facilitate the general public in knowing the compliance status of any BTS."

(Reply to Recommendation No. 14)

18. Taking note of the absence of any effective mechanism for redressal of public grievances, the Committee had recommended to extend the Complaint Handling System for Electro Magnetic Field for Radiation to other metros of the country with aggressive campaign for public awareness. The Action Taken reply indicate that no serious effort has been made by the Department to set up an effective Grievance Redressal Mechanism which will enable an aggrieved individual or member of general public to redress his or her grievances relating to EMF radiation from mobile towers. Even the only existing online complaint system operational in Mumbai which was to be extended to other 3 metros could not be extended due to the declining number of complaints. The reply of the Department is totally silent on the recommendations of

the Committee with regard to early finalization of consultation with the TSPs and infrastructure providers for displaying of name and address of the operators, contact person details, address of complaint redressing authority, level of EMF radiation, etc. at the entry point of the facility of tower and to involve members of the public forum, RWAs, NGOs, etc. in evolving an effective Grievance Redressal Mechanism. The Committee feel that the existing of mechanisms, such as online booking of complaint on CPGRAMS and annual testing of 10 per cent of the total BTS for compliance to the DoT norms for EMF radiations are not sufficient to allay the apprehension of the general public of the possible health effects of EMF emission from BTS of telecom towers. The Committee note that even the National EMF Portal, under development, will only enable the general public in knowing the compliance status of any BTS. As such, it will not be a viable substitute to an effective Grievance Redressal Mechanism. Considering that the general public has genuine concern regarding the real or perceived ill effect of EMF emission from BTS of telecom towers, the Committee feel that there is a need for widespread dissemination of information relating to EMF being emitted by various BTS and putting in place an effective Grievance Redressal Mechanism for redressal of any complaint. Since the reply of the Department is silent on this very important issue, the Committee reiterate their earlier recommendation to address these serious grievances of the people.

CHAPTER-II

RECOMMENDATIONS / OBSERVATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT

Recommendation No. 1

Introductory

The Committee note that Telecommunications has become an essential component for overall socio-economic development of the country, empowering the common man through access to information, health-care, education and greater financial inclusion. More particularly, the mobile telephony has become an integral part of our lives both in urban as well as rural areas. From the low strata to higher echelon of the society everybody today is dependent on mobile phones and the exponential growth of this sector over the last decade bears the testimony of the same. As per the information furnished by the Department of Telecommunications (DoT), there are 864.72 million wireless telephone connections (as on December, 2012) and to provide network coverage there are 7,47,917 Base Transmission Stations (BTS) in the country. Moreover, the primary objective of the recently announced National telecom Policy (NTP)-2012 is maximizing public good by making available reliable and secure telecommunication and broadband services across the country. India is one of the countries which has witnessed the fastest growth of mobile telephones in the world and to sustain this growth there has also been a tremendous growth of infrastructure in the form of mobile phone towers. In this regard, the Committee note that such tremendous development of mobile telephony in the country has also greatly increased the extent and magnitude of the Electromagnetic Radiations (EMR) exposure on human beings. Apprehensions have been raised about the harmful effects of EMF radiations associated with the mobile towers. It has been brought to the notice of the Committee that while some studies have shown that these are harmless radiations, some others have pointed out serious repercussions and ill effects of such radiations. The Committee find it worrisome that in the absence of any kind of regulatory framework, mobile towers have mushroomed across the country in a haphazard manner, more so in the urban areas.

The Committee find it most unfortunate that the Government has failed to take any concrete steps to regulate this infrastructure sector as well as to address the public apprehensions about impact on their health. The Committee strongly deprecate the lackadaisical approach of the Department of Telecommunications which is the nodal department for expansion and modernization of mobile telephony. Considering the immense importance of the subject, the Committee undertook detailed examination of various issues relating to the subject by holding consultations with various stakeholders, viz. public at large, experts, citizen groups, telecom industry organisaitons, etc. The Committee also held discussions with the representatives of the nodal Department i.e. the Department

of Telecommunications and sought clarifications on the vital aspects relating to the subject. The examination of the subject by the Committee has revealed several areas of public concern which needs to be addressed by the Government at the earliest. These are detailed in the succeeding paragraphs.

Action Taken by the Government

The Department of Telecommunication has taken various steps to regulate the infrastructure sector and has been taking due precautions and necessary actions since 2008 to address the public apprehensions about impact on their health by issuing various guidelines and norms taking into account the international standards/norms prescribed. A Brief overview of Telecom Tower infrastructure policy, EMF radiations and steps taken by Government in this regard is as follows –

Regulation of EMF radiations from mobile towers – Statutory position

Section 4 of Indian Telegraph Act, 1885 describes the privileges and powers of the Government in respect of telegraphs and power to grant licenses. Para 4(1) of Section 4 of Indian Telegraph Act, 1885 is reproduced below:

> 4(1) – *"Within India, the Central Government shall have the exclusive privilege of establishing, maintaining and working telegraphs:*
>
> *Provided that the Central Government may grant a license, on such conditions and in consideration of such payments as it thinks fit, to any person to establish, maintain or work a telegraph within any part of India."*

Department of Telecommunications, Government of India, has thus granted licenses, under Section 4 of Indian Telegraph Act, 1885, for Cellular Mobile Telephone Service (CMTS) and Unified Access Service (UAS) to Indian registered companies to establish, maintain and work on telegraph for providing mobile telephone services in the licensed area. Under CMTS and UAS license, the telecom service providers are establishing towers to provide the coverage of mobile services in their service area.

Further, to support the faster growth of telecom infrastructure including mobile tower, Department of Telecommunications has also created a separate registration category known as Infrastructure Providers Category-I (IP-I). The Infrastructure Provider-I registered companies are permitted to create passive infrastructure such as tower, dark fibre, duct space etc. and provide the same to licensed telecom service providers.

As per Clause 41.6 of the terms and conditions of UAS license, the LICENSEE is required to ensure that the Telecommunication installation carried out by it should not become a safety hazard and is not in contravention of any statute, rule or regulation and public policy. As per terms and conditions of the CMTS / UAS license and IP-I registration,

the responsibility of obtaining Permission/Right of Way for establishing towers lies with the telecom service providers/IP-I companies.

For providing the mobile services in the country, the telecom service providers have to establish Base Transmitting Stations (BTS), at suitable locations, as per their Radio Frequency (RF) Network Planning for proper coverage of the area. Prior to installation of mobile towers, the telecom service providers have to obtain Site clearance from Standing Advisory Committee on Frequency Allocation (SACFA) of DoT for every site from the point of view of interference with other wireless users, aviation hazards and obstruction to any other existing microwave links. The telecom service providers have also to obtain necessary clearances from concerned local authorities such as municipal corporation, Gram Panchayat etc before installation of tower.

DoT is responsible for giving SACFA clearances and for regulating the EMF radiation from BTS installed at the towers. State Government, Municipal Corporation and Local Bodies regulate the installation of towers as per their building byelaws.

Health effect due to EMF Radiations - International Research

The issue of health hazard from the radiations of mobile phone towers/networks has been in lime light for quite some time. In this regard, several studies have been conducted in different countries, under the aegis of World Health Organization (WHO). There is no conclusive scientific evidence of adverse health effects due to RF emission from mobile phone towers. WHO has referred to approximately 25,000 articles published around the world over past 30 years, and based on an in-depth review of scientific literature, has concluded: "current evidence does not confirm the existence of any health consequences from exposure to EMF radiation". Since the effects on human beings are to be studied over a long period of time, further studies are going on around the world.

With reference to Electromagnetic Radiation emanating from cellular mobile towers, World Health Organization (WHO) in its Fact Sheet No. 304, May 2006 on Electromagnetic Fields and Public Health (Base Stations and Wireless Technologies) has concluded that "*considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that the weak RF Signals from base stations and wireless networks caused adverse health effects. From all evidence accumulated so far, no adverse short or long term health effects have been shown to occur from the RF Signals produced by based stations*."[1]

In September 2013, WHO in online question and answers have mentioned that "Studies *to date provide no indication that environmental exposure to RF fields, such as from base stations, increases the risk of cancer or any other disease."*[2]

[1] http://www.who.int/peh-emf/publications/facts/fs304/en/

[2] WHO Online Q&A September 2013 http://www.who.int/features/qa/30/en/

In respect of EMF radiations from mobile handsets, WHO in Fact Sheet 193 published in June 2011 has concluded that "*A large number of studies have been performed over the last two decades to assess whether mobile phones pose a potential health risk. To date, no adverse health effects have been established as being caused by mobile phone use*".[3]

International EMF Project

As part of its charter to protect public health and in response to public concern over health effects of EMF exposure, the World Health Organization (WHO) established the International EMF Project[4] in 1996 to assess the scientific evidence of possible health effects of EMF in the frequency range from 0 to 300 GHz. The EMF Project encourages focused research to fill important gaps in knowledge and to facilitate the development of internationally acceptable standards limiting EMF exposure.

Since the commencement of the EMF Project, over 50 national authorities have been involved. Apart from the national authorities the project is overseen by 8 international organizations[5] and independent collaborating institutions[6] and together they review scientific information related to public and occupational health, and environmental management of the EMF issue. It is pertinent to note that many of these studies have been going on for years so as to understand the effect of EMF over the period of time and these studies are not specific to developed countries alone. While summarizing the key points on health effect of EMF radiation, WHO website[7] mentions the following:

> "…..*WHO's International EMF Project was launched to provide scientifically sound and objective answers to public concerns about possible hazards of low level electromagnetic fields.*
>
> *Despite extensive research, to date there is no evidence to conclude that exposure to low level electromagnetic fields is harmful to human health…"*

EMF Radiations – Recommended International safety standards

WHO recommended that *'National authorities should adopt international standards to protect their citizens against adverse levels of RF fields. They should restrict access to areas where exposure limits may be exceeded.* 'WHO has recommended adoption of

[3] http://www.who.int/mediacentre/factsheets/fs193/en/

[4] http://www.who.int/peh-emf/project/en/

[5] International Commission on Non-Ionizing Radiation Protection (ICNIRP), International Agency for Research on Cancer (IARC), United Nations Environment Programme (UNEP), International Labour Organization (ILO), International Telecommunications Union (ITU), European Commission (EC), International Electrotechnical Commission (IEC) and North Atlantic Treaty Organisation (NATO)

[6] Air Force Research Laboratory USA, Australian Radiation and Nuclear Safety Agency (ARPANSA), Health Protection Agency - Radiation Protection Division, United Kingdom, Institut für Strahlenhygiene, Germany and R. Samuel McLaughlin Centre for Population Health Risk Assessment

[7] Source: WHO website: http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html

international standards, namely ICNIRP/IEEE. The main conclusion from the WHO reviews is that EMF exposures below the limits recommended in the ICNIRP international guidelines do not appear to have any known consequence on health. The WHO says -

"*All reviews conducted so far have indicated that exposures below the limits recommended in the International Commission for Non Ionizing Radiation Protection (ICNIRP) 1998 EMF guidelines, covering the full frequency range from 0-300 GHz, do not produce any known adverse health effect. However, there are gaps in knowledge still needing to be filled before better health risk assessments can be made*."[8]

ICNIRP continually monitors the science to ensure its guidelines on safe exposure limits remain up to date.

Steps taken by Department of Telecommunications

Department of Telecommunication (DoT), since 2008, has been monitoring global developments and has already taken necessary steps and adopted stricter norms for safety from EMF radiation that are emitted from mobile towers and mobile handsets. Government of India has been taking due precautions and necessary actions in respect of EMF radiation emitted from mobile towers and mobile handsets by issuing various guidelines and norms taking into account the international standards/norms prescribed by International Commission on Non Ionizing Radiation Protection (ICNIRP) as recommended by World Health Organisation.

EMF safe exposure Limits from mobile towers adopted in India – As mentioned above, Government of India adopted the ICNIRP guidelines in the year 2008 for basic restriction and limiting reference levels of Electromagnetic radiation from Mobile towers and inserted the additional clause in the Access Service Licenses vide its amendment letter dated 4/11/2008. Based on the recommendations by Inter-Ministerial Committee (IMC), these norms for exposure limit for the Radio Frequency Field (Base Station Emissions) have been further reduced to 1/10th of the existing limits prescribed by International Commission on Non Ionizing Radiation Protection (ICNIRP). Directions in this regard have been issued to the Mobile Operators on 30.12.2011. These directions have been further revised on 10.01.2013 and 26.06.2013. As per latest directions of 26.06.2013 -

"*Licensee shall conduct audit and provide self certificates after every two years as per procedure prescribed by Telecommunication Engineering Centre (TEC) /or any other agency authorized by Licensor from time to time for confirming to limits/levels for antennae (Base Station Emissions) for general public exposure as prescribed by Licensor from time to time*."

[8] Source: WHO EMF Research - http://www.who.int/peh-emf/research/en/

The present limits/level are reproduced as detail below -

Frequency Range	E-Field Strength (Volt/Meter (V/m))	H-Field Strength (Amp/Meter (A/m))	Power Density (Watt/Sq.Meter (W/Sq.m))
400MHz to 2000MHz	$0.434f^{½}$	$0.0011f^{½}$	f/2000
2GHz to 300GHz	19.29	0.05	1

(f is frequency in MHz)

Keeping the precautionary EMF safe exposure limits for the Radio Frequency Field (Base Station Emissions) as 1/10th of the safe limits prescribed by ICNIRP for all areas in India, eliminates the need for fixing lower limits for specific areas like schools, hospitals, residential premises, children playgrounds; a segregation of which is impractical in densely populated localities.

Recent review of exposure limits by Committee constituted in compliance of direction by Hon'ble High Court Allahabad:

In a Writ Petition filed in Hon'ble High Court Allahabad, Lucknow bench, the Hon'ble Court vide its order dated 10.01.2012 constituted a committee including Members from IITs Kharagpur, Kanpur, Delhi, Roorkee, Bombay and from other scientific institutions of the country including Indian Council of Medical Research (ICMR) and All India Institute of Medical Science (AIIMS) Delhi who submitted its Report on 17-01-2014. After due consideration of the human health concerns on account of EMF radiation being raised in public and the Report of the Committee, the Government has decided in February 2014 that the present prescribed precautionary EMF safe exposure limits are adequate and need no further change at this stage.

Ensuring compliance to various safe limits standards:

Safe limits for emission from Base Transmitting Stations (mobile towers) - DoT on 8th April 2010 directed all CMTS/UAS licensees for compliance of the reference limits/ levels prescribed by ICNIRP by way of self certification of their Base Transmitting Stations (BTS) for meeting the EMF radiations norms. As per these directions, all BTSs should be ICNIRP guidelines compliant and all BTSs should be self certified as meeting the radiation norm. Self certification is submitted to respective Telecom Enforcement Resource & Monitoring (TERM) Cells of DoT. All new BTS sites starts radiating only after self certificate has been submitted to relevant TERM Cells. In order to ensure compliance to the prescribed stricter precautionary norms of EMF radiation from mobile tower, the extensive audit of compliance of self-certificates being submitted by telecom service providers and Base Transceiver Station (BTS) sites is carried out by Telecom Enforcement Resource & Monitoring (TERM) field units of DoT. This is regularly done by TERM units for the purpose

of limiting the EMF radiation exposure and keeping general public areas in the vicinity of towers safe. In case, any BTS site is found to violate the prescribed EMF norms, actions are taken to put a penalty of Rs. 10 lakh per BTS per incidence including closing of BTS site as per the prescribed procedure. Additionally, the BTS sites against which there are public complaints are also tested by TERM Cell. The testing is done as per procedures prescribed by Telecom Engineering Centre (TEC) from time to time. TEC has published the Test Procedure for measurement of EMF from BTSs vide document no. TEC/TP/EMF/001/01 SEP 2009. TERM units as of 31.07.2014, have audited more than 1,51,000 BTSs for EMF emission limits compliance, out of which 184 BTSs were found to be exceeding the radiation limit. A penalty of Rs 9,00,00,000 have been levied for such BTSs.

Specific Absorption Rate (SAR) safe exposure Limits from mobile handsets adopted in India - With respect to radiation from Mobile Handsets, also ICNIRP has prescribed values for Specific Absorption Rate (SAR) limit as 2 Watt/Kg averaged over 10 gm tissue. Based on the limits provided by ICNIRP, DOT, in the year 2008, notified for compliance of Mobile Handsets being manufactured in India as well as the handsets being imported to conform to SAR limit of 2 W/kg (averaged over a mass of 10 gm tissue) localised for head and trunk in the frequency range of 10 MHz to 10 GHz. Based on the recommendations by IMC, SAR level for Mobile Handset has been revised from 2 watt per Kg averaged over a mass of 10 gram human tissue to 1.6 Watt per Kg averaged over a mass of 01 gram human tissue. Directions in this regard including other recommendations related to Mobile Handset have been issued to Mobile Handset Manufacturers on 25.01.2012. These directions have now become effective since 01.09.2013. From 01.09.2013, the mobile handsets with revised SAR value of 1.6 Watt/Kg averaged over a mass of 1 gram human tissue are only permitted to be manufactured or imported in India for domestic market.

SAR value testing Lab - A laboratory has been set-up in the Telecommunication Engineering Centre (TEC) for testing of SAR value of mobile handsets imported/manufactured in India.

Public Awareness

DoT has issued a 'Precautionary Guidelines for Mobile User' advising to take certain precautions while using/purchasing the mobile handsets. These guidelines are available at DoT website. DoT has also issued an informative guide on 'Mobile Communications-Radio Waves and Safety' and the same is available on DoT website. The document covers a basic introduction to radio waves, various terminologies, Do's & Don'ts related to mobile phone usage, clarification of various myths regarding deployment, use of Radio waves / Safety Standards and frequently asked questions relating to Mobile phones & Human health. Advertisement for ensuring safety from radiations of Mobile Towers & handsets has been issued by DoT which has been published in National & Regional Newspapers.

EMF Web portal

Telecommunication Engineering Center (TEC), a wing of DoT, is carrying out a pilot project on EMF web portal for implementation of online database for EMR of BTS towers. The pilot trial of web portal is being conducted in three circles Mumbai, Haryana, Karnataka and the city of Hyderabad. The portal is envisaged to provide a public interface for viewing the EMF compliance status of mobile towers, anywhere in India. The portal is meant to generate confidence among the public about effectiveness of the EMF compliance process in India.

Guidelines for Installation of Mobile Tower

Broad guidelines for issue of clearances for installation of Mobile Towers were forwarded to all the State Governments on 23.08.2012.The above guidelines have been further revised with effect from 01.08.2013 and are available on DOT Website. These address concerns of various stake holders.

No restriction has been imposed on installation of tower on specific buildings such as schools/hospitals/play grounds etc. Wherever antennae are mounted on the wall of building or pole on/along the road, their height should be at least 5 meters above ground level/road level. However, such installation will have to comply with the radiation limit.

India Specific research in the field - Committee Constituted by Department of Science & Technology:

As far as India specific studies are concerned, Department of Science & Technology (DST), Government of India, is working on this issue for conducting study on possible impact of EMF Radiation exposure from mobile tower and handset on life (humans, living organism, flora & fauna and environment) and related initiatives. Based on the recommendation of the Committee consisting of former Director General(ICMR), representative from IIT Chennai, Indian Institute of Toxicology Research, Lucknow, Department of Telecom, Ministry of Environment & Forest, ICMR and DST; Science and Engineering Research Board (SERB) has invited R&D proposals in June, 2013 on the possible impact of EMF radiation exposure from mobile towers and handsets on life (humans, living organism, flora & fauna and environment) and related initiatives from Eligible Scientist/Organizations-public or private, individually or in collaboration. The SERB has constituted an Expert Committee/Task Force on 04 September 2013 to evaluate, R&D proposal to study the possible impact of EMF Radiation exposure from mobile tower and handset on life (humans, living organism, flora & fauna and environment) and related initiatives. SERB has short listed 79 proposal for carrying out scientific studies. Thus, India specific scientific research by Indian Scientist/Engineers keeping in view Indian environment and conditions are being carried out and conclusive data from these researches will also become available in future.

(Ministry of Communications & Information Technology /Department of Telecommunications O.M. No. 12-25/2010-CS-III(Pt. II)

Recommendation (Para No. 2)

Need for clear defined role for setting up of telecom towers

The Committee note that Entry No. 31 of the List I (Union Government) of the 7th Schedule to the Constitution provides for posts and telegraphs; telephones; wireless; broadcasting and other forms of communications. Resultantly the matters relating to telephones; wireless; etc. comes within the domain of the Central Government. In terms of section 10 of the Indian Telegraph Act, 1885 Act, for installation of towers on a property i.e. the Right of Way (RoW), the TSPs have to obtain the permission of local authorities such as Municipal Corporations, Gram Panchayats etc. of the concerned State Governments/ Union Territory Administrations. Thus, as per the existing legal framework, the role of DoT is confined only to issuing site clearance for installation of mobile towers for each and every site from the point of view of interference with other wireless users, aviation hazards and obstruction to any other existing microwave links only, whereas the physical aspects like permission for use of property for erecting the tower, rent, structural safety etc. comes within the domain of local authorities. The Committee find that in the absence of any uniform national policy, different local civic authorities/ State Governments have evolved their own criteria which vary widely across the length and breadth of the country. Thus, each State and city to city have different terms and conditions with regard to taxes, levies, safety aspects, restrictions on installation of towers in certain areas and time frames for granting permission for installation of mobile towers etc. even though all telecom services are governed under the same Indian Telegraph Act, 1885. This, besides having an adverse impact on the smooth growth of telecom sector has also resulted in disputes between the TSPs and the local authorities leading to filing of petitions in various courts across the country. The TSPs associations like Associated Chambers of Commerce and Industry of India (ASSOCHAM), Association of Unified Service Providers of India (AUSPI), Cellular Operator's Association of India (COAI), Towers and Infrastructures Providers Association of India (TAIPA), etc. in their memoranda submitted to the Committee, have strongly advocated that Telecommunication being a Central subject, the Central government should have exclusive jurisdiction to legislate therein as it is completely beyond the jurisdiction of any State Authority. The Committee also find that the existing framework does not provide any say to the public in addressing their concerns / apprehensions when a tower is installed in their vicinity.

The Committee find the existing system undesirable and unhealthy for the conducive development of telecom infrastructure in the country and are of the view that DoT has failed to address such a critical and important issue concerning the entire nation. The Committee, while observing that 'Addressing the Right of Way' issue in setting up of telecom infrastructure is also one of the objectives enumerated in the NTP-2012, strongly recommend that the entire issue of jurisdiction of DoT vis-à-vis State Government/Local

Bodies in respect of setting up of mobile towers be re-examined in depth by the Central Government and a national policy be evolved to streamline these procedural issues for ensuring faster and smooth growth of telecom services in the country while taking note of health concern of the people.

Action Taken by the Government

For providing the mobile services in the country, the telecom service providers have to establish Base Transmitting Stations (BTS), at suitable locations, as per their Radio Frequency (RF) Network Planning for proper coverage of the area. Prior to installation of mobile towers, the telecom service providers have to obtain Site clearance from Standing Advisory Committee on Frequency Allocation (SACFA) of DoT for every site from the point of view of interference with other wireless users, aviation hazards and obstruction to any other existing microwave links. The telecom service providers have also to obtain necessary clearances from concerned local authorities such as municipal corporation, Gram Panchayat etc before installation of tower. DoT is responsible for giving SACFA clearances and for regulating the EMF radiation from BTS installed at the towers. While State Government, Municipal Corporation, Local Bodies regulate the installation of towers as per their building byelaws including the structural safety.

A broad guideline has already been issued for clearance of installation of Mobile Towers as formulated by DoT and forwarded to the Chief Secretaries of all States on 23.08.2012. The said guideline issued by DoT was advisory in nature to have uniformity across all the States in respect of grant of permission for installation of mobile tower by telecom service provider. The revised guideline for grant of clearances for installation of mobile towers has been issued on 01.08.2013.

As per the revised guideline, fixation of standards for exposure limits of radio frequency field emissions from mobile base stations, monitoring their compliance, all radiation related technical issues, and issues of Access Service Licence / Infrastructure Provider registration and SACFA clearance for frequency allocation at any location are dealt by DoT. The documents to be submitted by telecom service providers to the local bodies, while applying for permission for installation of tower, has been clearly brought out in the said revised guideline.

Regarding installation of towers different states/local bodies have their own policies/laws which vary from one state to another. A national policy defining uniform Right of Way would be a more appropriate solution. However, as brought out earlier, the building byelaws of State Government/Municipal Corporations/ Local Bodies regulate the installation of towers. This is a subject matter pertaining to State List in the Constitution. Keeping this in mind, DoT has issued broad guidelines for clearance of installation of mobile

towers to Chief Secretaries of all the states. These guidelines will help in formulation of uniform-like policies across various states. These guidelines have been issued recently and, in future, will be able to achieve their desired objective.

Department of Telecom has taken various steps to address health concerns related to EMF radiations. Stricter precautionary limits for EMF radiation from mobile tower as well as from mobile handset/phones have been prescribed. In order to ensure compliance to the prescribed stricter precautionary norms of EMF from BTS tower and keeping general public areas in the vicinity of towers safe, the extensive audit of comprehensive self-certificates and sites is being carried out by TERM Cells of DoT. In order to make the deterrence stronger, the penalty for violation of prescribed stricter EMF norms from BTS tower by telecom service providers has been increased from Rs. 5 Lakhs to Rs. 10 Lakhs per BTS, per incidence per operator w.e.f. 20th November, 2013. Concerned departments of Government have been asked to step up efforts to spread public awareness on EMF and precautions regarding mobile phones (Handsets) to allay undue apprehensions in regard to possible health effects of EMF radiation.

(Ministry of Communications & Information Technology /Department of Telecommunications O.M. No. 12-25/2010-CS-III(Pt. II)

Recommendation (Para No. 3)

Need for an enforceable national guidelines for setting up of telecom towers

The Committee note that mobile telephony which was introduced in the country more than one and a half decade back underwent high pace of growth and already more than 7 lakh Base Transmission Stations (BTSs) have been installed in the country to cater to the need of more than 860 million mobile connections. The Committee, however, are unhappy to note that even after the lapse of such a long period, no uniform telecom infrastructure policy has been framed by the Government for setting up of the mobile towers in the country. This has resulted in a haphazard growth of this sector with varying parameters from State to State in setting up of mobile towers besides mushrooming of a large number of illegal towers all over the country. It was only in the year 2012 that DoT came out with some guidelines on grant of clearances for installation of mobile towers which too were just advisory in nature. The Committee note that these guidelines were sent to the Chief Secretaries of all States and UTs and were also placed on the website of the Department for inviting comments/ suggestions and based on the comments/ suggestions so received, the DoT issued revised guidelines on 1st August, 2013 which again are advisory in nature and none of the provisions contained therein have any kind of statutory backing. The Committee express their strong displeasure that even though the DoT has formulated revised guidelines, the Department is not aware of the practices followed in advanced countries like UK/ USA with respect to setting up of mobile towers.

The Committee are of the strong opinion that before formulating and issuing revised guidelines for setting up of mobile towers, the DoT ought to have studied and adopted the best practices prevalent in the advance countries in this regard. Further, the scrutiny of these revised guidelines has revealed various loopholes and ambiguities which in the opinion of the Committee render the guidelines ineffective and deficient on a number of crucial aspects. The Committee find that the revised guidelines have not addressed the important issue of removal of already existing illegal mobile towers or making it mandatory for the existing more than 7 lakh towers to comply with the guidelines. Moreover, no road map has been prescribed as to how the revised guidelines are supposed to be implemented within a specific timeframe.

The Committee are of the firm opinion that until or unless the deficiencies in the guidelines are fully addressed, these are hardly expected to serve any meaningful purpose in streamlining the process of mobile tower installations and relocation of the already existing towers, wherever necessary, in the country. The Committee, therefore, strongly recommend that efforts should be made by the Department to come out with fresh guidelines in consultation with State Governments taking into consideration the above concerns of the Committee. The Committee further recommend that the implementation of guidelines should be made mandatory across the entire country by giving them a statutory backing. Apart from this, the Committee also strongly recommend for issuing of directives to all State Governments/Local Municipal bodies for immediate removal of all such illegal towers which have been set up without permission or which have failed to obtain the required 'No Objection Certificate' for structural safety or otherwise pose any kind of risk or health hazard to the public or to the residents living in the vicinity of mobile towers.

Action Taken by the Government

As has been detailed earlier, the revised guidelines for grant of clearances for installation of mobile towers have been issued on 01.08.2013. These broad guidelines already stipulate the requirements for Telecom Service Providers/ Infrastructure Providers for obtaining clearance from local bodies / state governments for installation of mobile towers. These broad guidelines issued by DoT for clearance of installation of mobile towers to Chief Secretaries of all the states, should help in formulation of uniform-like policies across various states. These guidelines have been issued recently and in future will be able to achieve their desired objective. In the meanwhile, keeping the recommendations of the Standing Committee in mind, DoT has taken steps to study best practices being followed in advance countries and information on the same is being collected.

For towers installed without permissions required under byelaws of local bodies, State Governments are taking actions based on the letter/advisory guidelines issued by DoT to states. For towers that pose any risk of health hazard to the public due to EMF radiation,

extensive audit of comprehensive self-certificates and sites for compliance to EMF radiations safe limits being submitted by telecom service providers is being carried out by TERM Cells of DoT. These audits have the purpose of limiting the EMF radiation exposure and keeping general public areas in the vicinity of towers safe, and are carried out as per the procedure prescribed from time to time in their respective License Service Areas. TERM Cell of DoT levy penalty on those towers which violates the prescribed norms. In order to make the deterrence stronger, the penalty for violation of prescribed stricter EMF norms from BTS tower by telecom service providers has been increased from Rs. 5 Lakhs to Rs. 10 Lakhs per BTS, per incidence per operator w.e.f. 20th November, 2013. Provision has also been made to shut down the sites which do not meet the prescribed norms.

(Ministry of Communications & Information Technology /Department of Telecommunications O.M. No. 12-25/2010-CS-III(Pt. II)

Recommendation No. 4

Structural Safety for setting up of telecom towers

The Committee have been informed that many of the mobile towers have been erected in the country without ensuring safety of the buildings and even without taking any permission from the local bodies thereby posing a great risk to the buildings as also the residents living nearby. The Secretary, Department of Telecommunications, also admitted during evidence before the Committee that safety aspects of telecom infrastructure like towers is an area of concern. The Committee are perturbed to find that such an important issue has been given a very scant attention both by the Central as well as State Governments. While strongly deprecating this kind of approach, the Committee note that the Telecom Engineering Centre (TEC) of the Department of Telecommunications has developed 12 standards concerning structural safety and design parameters of telecom towers using codes/specifications by Bureau of Indian Standards (BIS). The Committee, however, are dismayed to find that these standards have not been made mandatory for Telecom Service Providers. The Committee are not at all convinced with the justification given by Secretary, DoT, during evidence before the Committee, that since structural safety is the domain of State, the Department does not want to venture into the area. Instead of ensuring that standards developed by TEC are strictly adhered to, the revised guidelines issued by DoT regarding States to secure Structural Stability Certificate from authorized structural Engineer of State/Local bodies/Central Building Research Institute (CBRI), Roorkee/IIT/NIT or any other agency authorized by local body. The Committee recommend that for the purpose of avoiding any ambiguity in this regard, the Central Government may finalise a specific list of institutes of excellence and repute belonging to Central Government/State Governments and also autonomous organization/Institutes funded by the Central/State Governments. The Committee also recommend that it should be made mandatory for all TSPs to scrupulously follow uniform norms concerning structural safety of

telecom towers across the entire country and adequate mechanism must be put into place for ensuing strict compliance of the same. Further, all such towers which do not adhere to the norms should be removed immediately. The Committee also desire that to deter installation of towers not conforming to the safety norms, stringent penalty provisions must be imposed on the service providers.

Action Taken by the Government

Telecom Engineering Centre (TEC) has developed standards concerning structural safety and design parameters of telecom towers using codes/specifications by Bureau of Indian Standards (BIS). The matter is under consideration for making TEC standards mandatory for implementation by TSPs.

TEC is also developing Generic Requirements (GR) for 20/30/40 Meter Guyed Masts exclusively for deployment in hilly areas. TEC is processing the case for taking up with Structural Engineering Research Centre (SERC), Chennai for vetting the structural safety before draft GR can be circulated to stakeholders for comments and consideration of Departmental Co-ordination Committee. It is expected that the GR will be ready by December 2014.

Department of Telecom through its advisory to the State Governments has already suggested CBRI, IIT Roorkee, Other IITs and NITs, as also mentioned in the Recommendation of the Committee. Further, it has been mentioned in the same letter that Local bodies may also authorise agencies for this purpose. Since regulation of structure of buildings/ installations lies in the domain of Local bodies, designation of any additional institution/agency can be done only by them.

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Comments of the Committee
(Please see Para No. 9 of Chapter I)

Recommendation (Para No. 5)

<u>Sharing of Telecom Towers</u>

The Committee note that more than 7,00,000 telecom towers are already in existence all over the country and taking into consideration the rapid growth of mobile sector, more and more mobile towers are likely to come up during the coming years. The Committee, therefore, are of the strong opinion that some urgent action needs to be taken to curb the ever growing number of the mobile towers as already serious apprehensions are

being expressed about the cascading effects of the radiations emitted by the mobile towers both on human health and the environment. Taking into consideration the views/concerns expressed before the Committee by various stakeholders, Committee strongly feel that tower sharing can prove to be a very effective tool in restricting the number of towers. Further, sharing of towers would be cost advantageous to Telecom Service Providers in terms of capital and operating expenditure. The Committee also feel that by sharing of tower infrastructure, telecom coverage can be achieved more efficiently and effectively due to reduced need of infrastructure facilities as well as electricity. The Committee, therefore, strongly recommend that the Government must bring clear guidelines in this regard and encourage the service providers for tower sharing.

Action Taken by the Government

As brought out in response to recommendation no 1 above, there are no conclusive evidence/studies by either national or international organisation to establish the health hazard from the EMF radiation so far. However, DoT has already taken necessary steps and adopted stricter norms for safety from EMF radiation that are emitted from mobile towers. The radiation exposure depends on the EMF radiation level at a particular place rather than on number of towers. If the EMF radiation level at a place is within the prescribed limit, there should not be any concern about number of mobile towers.

Sharing of "passive" infrastructure viz., buildings, towers, dark fibers etc. is permitted under the existing licensing regime. Under USO funded scheme Government has taken steps for encouraging sharing. At present the towers built under this scheme are to be shared by 3 operators.

(Ministry of Communications & Information Technology /Department of Telecommunications O.M. No. 12-25/2010-CS-III(Pt. II)

Recommendation No. 6

<u>Issues relating to health hazards from EMF emission</u>

The Committee note with concern that the Government had not adopted or prescribed any standards relating to safe exposure from electromagnetic radiations emitted by the mobile towers as well as the mobile handsets and it was only in the year 2008 that the Department of Telecommunications adopted the standards prescribed by the International Commission for Non-Ionizing Radiation Protection (ICNIRP) although the same were in existence since 1998. These norms are a kind of international safety guidelines for RF exposure. Thereafter, based on the growing media reports and increasing public concern on the possible health hazards of EMF emission from antenna(e) of telecom towers/networks, an Inter- Ministerial Committee (IMC) was constituted by the Government in August, 2010 to examine the effect of EMF Radiation from Base

Transmission Stations (BTSs) and mobile phones. Based on the recommendations of the IMC, in respect of BTSs, exposure limit for Base Station Emissions was subsequently reduced to 1/10th of the limits prescribed by ICNIRP with effect from 01.09.2012, which according to the various memoranda received by the Committee has still failed to allay the fear amongst the public who have cited various kinds of health hazards to human beings, animals, flora and fauna from the EMF emission of telecom towers.

During the course of the examination of the subject, the Committee found two contradictory views on ill effects of EMF emissions from telecom towers and mobile handsets on humans and wildlife. The Committee note that on one side, various organizations/ stakeholders, such as, Association of Unified Telecom Service Providers of India (AUSPI), Cellular Operators Association of India (COAI), Reliance Communications Limited, Vodafone India Limited, European Business Group etc., have denied the harmful effects of EMF radiations from mobile towers and mobile handsets and also contended that sufficient precautionary measures have been put in place. On the other side, various studies including Bioinitiative Report of 2012 have linked several adverse health effects to electromagnetic fields from mobile tower and handsets including effects on wildlife like birds, bats, honey bees, etc. Some of the health effects reported are effect on cell growth, cell differentiation, DNA damage, altered immune system, hormonal effects, pervasive impairment of metabolic and reproductive system, effect on fertility, reproduction and health of off-springs, risk of glioma (a malignant brain tumour), sleep disorders, confusion, anxiety and depression and appetite disturbance, etc. The Department of Telecommunications has cited a World Bank Report of May, 2006 which has concluded that considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that the weak RF signals from base stations and wireless networks caused adverse health effects. In this regard, the Committee feel that the Department is selectively relying on the research findings which have concluded that there is no health effects of EMF from telecom towers/networks while ignoring host of other reliable research and concerns made which have proved to the contrary. Considering the seriousness of the matter which concerns the citizens of the country, the Committee recommend that Government should entrust the scientific study on impact of Telecom towers and handsets on humans to a reputed Government organization in a time bound programme. Till such time Government should strictly enforce EMF radiation norms finalized in September, 2012 which are reportedly 1/10th of ICNIRP prescribed norms.

Action Taken by the Government

As has been brought out in response to recommendation no 1 above, extensive research has been carried out on the subject of health effects from EMF radiation. WHO has clearly stated that in the area of biological effects and medical applications of non-ionizing radiation approximately 25,000 articles have been published over the past 30 years. Despite

the feeling of some people that more research needs to be done, scientific knowledge in this area is now more extensive than for most chemicals. Based on a recent in-depth review of the scientific literature, the WHO concluded that current evidence does not confirm the existence of any health consequences from exposure to low level electromagnetic fields. However, some gaps in knowledge about biological effects exist and need further research.

The Committee on Man and Radiation (COMAR) is a technical committee of the Engineering in Medicine and Biology Society (EMBS) of the Institute of Electrical and Electronics Engineers (IEEE), an international standard making body. COAMAR is primarily working in the area of biological effects of non-ionizing electromagnetic radiation, including radiofrequency (RF) energy. With regard to Bio-Initiative report 2007, COMAR submitted a statement in 2009 titled - "COMAR Technical Information Statement: Expert reviews on potential health effects of radiofrequency electromagnetic fields and comments on the Bio Initiative Report". Extract of this statement is as below:

> "*This report summarizes the conclusions from several major reports and comments on the markedly different conclusions in the Bio Initiative Report (abbreviated BIR below). Since appearing on the Internet in August 2007, the BIR has received much media attention but, more recently, has been criticized by several health organizations (see Section titled "Views of health agencies about BIR"). COMAR concludes that the weight of scientific evidence in the RF bio effects literature does not support the safety limits recommended by the Bio Initiative group. For this reason, COMAR recommends that public health officials continue to base their policies on RF safety limits recommended by established and sanctioned international organizations such as the Institute of Electrical and Electronics Engineers International Committee on Electromagnetic Safety and the International Commission on Non-Ionizing Radiation Protection, which is formally related to the World Health Organization*."

Further, it is also noted that Indian Council of Medical Research (ICMR), on critical examination of the Bio-initiative 2012 Report, has observed that the report is not based on multi disciplinary weight and there is no balanced reflection of the current state of scientific knowledge. However, further study is needed to arrive at a conclusion about the potential health effects of EMF radiation.

India specific scientific research by Indian Scientist / Engineers keeping in view Indian environment and conditions are being carried out and till the time conclusive data from these researches becomes available, we have to rely on research done by reputed international agency like WHO, ICNIRP etc. These agencies have already carried out extensive research on the subject as has been brought out above. However, Department of

Science & Technology (DST), Government of India, is already working on conducting study on possible impact of EMF Radiation exposure from mobile tower and handset on life (humans, living organism, flora & fauna and environment) and related initiatives. Based on the recommendation of the Committee headed by former Director General (ICMR), representative from IIT Chennai, Indian Institute of Toxicology Research, Lucknow, Department of Telecom, Ministry of Environment & Forest, ICMR and DST, Science and Engineering Research Board (SERB) invited R&D proposals in June, 2013 on the possible impact of EMF radiation exposure from mobile towers and handsets on life (humans, living organism, flora & fauna and environment) and related initiatives from Eligible Scientist/Organizations-public or private, individually or in collaboration. The SERB has constituted an Expert Committee / Task Force on 04 September 2013 to evaluate, R&D proposal to study the possible impact of EMF Radiation exposure from mobile tower and handset on life (humans, living organism, flora & fauna and environment) and related initiatives. SERB has short listed 79 proposal for carrying out scientific studies. Thus, India specific scientific research by Indian Scientist / Engineers keeping in view Indian environment and conditions are being carried out and conclusive data from these researches will also become available in future.

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Comments of the Committee
(Please see Para No. 12 of Chapter I)

Recommendation No. 7

Restrictions on setting up of mobile towers in residential areas

The Committee note that in the existing scenario, the setting up of a mobile tower generally involve a commercial agreement between the Telecom Service Provider (TSP) and the property owner who has rented out his property, thereby serving the interests of both. However, no right is available to the people living nearby although they have to face risks associated with the mobile towers, be it the EMF radiation or other kind of mishappenings associated with the high rise telecom towers in the residential areas. The Committee have received various complaints from individuals and housing societies about the undesired setting up of mobile towers in residential areas and have sought their removal and relocation at a specified distance from the residential areas. The main reasons for the complaints are that people living near the towers are suffering from brain tumors, cancer, headache, nausea amongst other problems due to continuous exposure to electro-magnetic radiation from the mobile tower. The Committee note that as per the existing practice there is no bar on installation of mobile towers in residential areas as well as taking consent of the nearby residents is not mandatory. Only the consent of the building owner in

case of roof based towers and land owner in case of ground based towers is required to be taken. As a result, more and more mobile towers are being installed by the TSPs in residential areas after paying huge monthly rental to property owners without the requirement of getting any kind of approval from the people residing nearby or civic bodies or Residential Welfare Associations. The Committee feel perturbed to find that no efforts have been made by the Department, TSPs and local bodies to involve the general public in the setting up of mobile towers. The Committee are of the view that the attitude of the Department in turning a blind eye to the concerns of the public highly deplorable and tantamount to shirking of responsibility towards the public safety. The Committee are of the strong view that general public are the greatest stakeholders and therefore without their involvement in the issue, any decision would be incomplete and unjust. While the Committee agree that the purpose of setting up mobile towers is to provide better connectivity to the public and not alone the profit generation by the telecom companies, the Committee strongly recommend that the Government must frame a comprehensive policy on setting up of telecom towers in residential areas in densely populated cities taking into consideration the public health concerns, mandatory involvement of public/ Resident Welfare Association/ NGOs/ Public Forums/ residents of the nearby buildings or areas before installing telecom towers in their area as well as emulating the safest international practices followed in this regard. The Committee further recommend that such policy framework should be made uniformly applicable all across the country irrespective of the prevailing local laws of the concerned States/UTs/local municipal bodies.

Action Taken by the Government

The main conclusion from the WHO reviews is that EMF exposures below the limits recommended in the ICNIRP international guidelines do not appear to have any known consequence on health. The WHO says - "*All reviews conducted so far have indicated that exposures below the limits recommended in the International Commission for Non Ionizing Radiation Protection (ICNIRP) 1998 EMF guidelines, covering the full frequency range from 0-300 GHz, do not produce any known adverse health effect. However, there are gaps in knowledge still needing to be filled before better health risk assessments can be made*."[9] ICNIRP continually monitors the science to ensure its guidelines on safe exposure limits remain up to date. Therefore, if the EMF radiations from mobile tower(s) are below the prescribed limits, such mobile towers do not pose any health risk.

It would also be pertinent to mention that in a petition (CWP No. 12047 of 2013 filed by Sh. Dhup Singh Vs. Union of India), Hon'ble High Court of Punjab & Haryana dismissed the petition stating –

[9] Source: WHO EMF Research - http://www.who.int/peh-emf/research/en/

" In view of the fact that Union of India had taken steps as mentioned in their detailed reply, no ground is made out for restraining the official respondent from installing mobile tower in residential area."

A Division bench of the Kerala High Court in the case of Reliance Infocom Ltd. Vs. Chemanchery Grama Panchayat and ors., reported in AIR 2007 Kerala 33 has observed that the surveys conducted in proximity to the base stations indicated that the public was exposed to extremely low intensity RF fields in the environment and all the evidences indicated that they were unlikely to pose the risk to health. Some of the observations of Division bench of the Kerala High Court, as contained in para 5 of the judgement are quoted below –

" We have already found that RF exposures from Mobile Base Stations are much less than from radio, Fm radio and television transmissions and that the consensus of scientific community is that the radiation from Mobile Phone Base Stations is far too low to produce health hazards if people are kept away from direct access to the antenna and the overall evidence indicates that they are unlikely to pose a risk to health. The strength of radio frequency fields in front of the antennae varies with the distance. Persons standing directly in front of the antennae in these high density zones will get higher exposures. We have also found that the height of Mobile Base Station antennae is normally 36 metres and the effect of radio waves depends on the distance from the base stations since the antennae are directed horizontally with a 5 degree downwards tilt. Human studies pertaining to base stations conducted by Santini R et al (2002), Bortkiewicz et al (2004) & Hutter & Kundi et al (2006) do not report any quantitative parameters related to health hazards. Therefore, it can safely be concluded that the permission granted for installation of Mobile Base Station by the Panchayat would not cause as such any health hazards nor will it affect the fundamental rights guaranteed to citizens under Article 21 of the Constitution. Right to life enshrined under Art.21 includes all those aspects of life which make life meaningful, complex and worth living. Development of technology has its own ill-effects on human beings, but, at times people will have to put up with that at the cost of their advantages. Petitioner and others for installing towers will have necessarily to comply with the statutory provisions contained in Chapter XIX of the Kerala Municipal Building Rules, 1999 which permits construction of telecommunication towers over buildings. Petitioner has submitted that it has already satisfied all those conditions and in such circumstance, Panchayat has granted the licence."

Hon'ble High Court of Gujarat at Ahmadabad has also rejected petitions which were also similar to this case.

The EMF safe exposure limits for the Radio Frequency Field (Base Station Emissions) as prescribed by DoT are already one tenth (1/10th) of the limits prescribed by International Commission on Non Ionizing Radiation Protection (ICNIRP). Keeping the precautionary EMF safe exposure limits for the Base Station Emissions as 1/10th of the safe limits prescribed by

ICNIRP for all areas in India, eliminates the need for fixing lower limits for specific areas like schools, hospitals, residential premises and children playgrounds; a segregation of which is impractical in densely populated localities.

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Recommendation No. 8

Restrictions on setting up towers in schools, colleges and hospitals

The Committee note that there are few countries like Switzerland which have adopted ICNIRP norms but implemented lower ICNIRP limits as a precautionary approach for areas like apartments, schools, hospitals, workplace and children playgrounds. However, the DoT has not made any efforts or collected information about the countries which have imposed such restrictions. Moreover, the recommendations made by the Inter-Ministerial Committee in their Report to impose restrictions on installations of mobile towers within the premises of schools, hospitals etc. housing vulnerable sections of the society, were rejected by the Department on the ground that these are not based on scientific study or facts and imposing restrictions on installation of towers in schools and colleges etc. may lead to increased public resistance against installation of towers. The Committee at the same time note from the information furnished by DoT that some States like Rajasthan and Madhya Pradesh have imposed restrictions on setting up of telecom towers in schools, colleges, etc. and have issued their own guidelines and Gazette Notifications in this regard. The Committee also cannot ignore the information placed before them by various experts/ organizations about the growing scientific evidence regarding biological effect of radiations from telecom tower radiations especially on the more vulnerable sections of the society like elderly people, pregnant women and children. Also taking note of the reports about a number of ongoing litigations in various parts of the country on this account, the Committee strongly feel that as a precautionary approach there is an imperative need to fix stringent norms with regard to radiation for areas like schools, hospitals, residential premises, children playgrounds etc.

Action Taken by the Government

As has been detailed in para 7.1.1 above, the main conclusion from the WHO reviews is that EMF exposures below the limits recommended in the ICNIRP international guidelines do not appear to have any known consequence on health. If the EMF radiations from mobile tower(s) are below the prescribed limits, such mobile towers do not pose any health risk. In India norms for exposure limit for the Radio Frequency Field (Base Station Emissions) are already 1/10th of the safe limits prescribed by International Commission on Non Ionizing Radiation Protection (ICNIRP). Keeping the precautionary EMF safe exposure

limits for the Radio Frequency Field (Base Station Emissions) as 1/10th of the safe limits prescribed by International Commission on Non Ionizing Radiation Protection (ICNIRP) for all areas in India, eliminates the need for fixing lower limits for specific areas like schools, hospitals, residential premises and children playgrounds; a segregation of which is impractical in densely populated localities.

Further, the issue is under consideration of Hon'ble Supreme Court in the matter of UOI V/S Justice (Retd.) Israni.

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Recommendation No. 9

Need for India Specific long term Research

The Committee note that all the standards of radiation limit which the government has chosen to follow are based on the researches conducted in western countries where conditions are very different from countries like India. Some of the specific differences between western countries and India are low population density, cold climatic conditions, low density of mobile phone towers etc. The Committee also note that DoT has acknowledged that some of the India specific conditions, such as, multi-operator scenario, mobile phone usage, higher population density etc., have been conveyed to WHO for their considerations in carrying out with India specific research. Against this backdrop, the Committee are not convinced with contention of DoT that none of the studies done under the aegis of the WHO had proved that the emissions from the mobile phone towers/networks are causing harmful effect on human beings as the same are not based on India specific research. The Committee find it deplorable that some of the India specific research carried out by eminent scientists and other Governmental organisations have not been taken into consideration by DoT in forming its guidelines. For instance, a 10 year study conducted by Prof. Gandhi of Department of Genetics, Guru Nanak Dev University, Amritsar has found that radiations emitted from the towers are degenerating DNA and chromosomes. Similarly, a study conducted by Prof. Jitendra Behari in Jawaharlal Nehru has found that the exposure to radiation from mobile towers and mobile phones could have an adverse impact on male fertility and deplete the defense mechanism of cells. Also the Environment and Forest Ministry study has blamed electromagnetic radiation from communication towers for the declining number of sparrows and bees, etc. The Committee, in view of the above findings made by the reputed experts and research institutes, feel that there is no room for complacency on the issue by selectively relying only on the findings of WHO whose research reports are mainly based on developed countries and strongly recommend that the findings of India specific studies should also be taken into consideration by DoT in coming out with its policy initiative on mobile towers.

The Committee also note that the main challenge involved in conducting studies on radiation hazards from mobile towers and mobile handsets is the requirement of very long period of scientific research on targeted population and the lack of established standard procedures and protocols to study and monitor the EMF impacts on humans and wildlife. The Committee are , however, concerned to note that in spite of exponential growth of mobile telephony in the country over the last decade, no efforts have been made by the Department to undertake a continuous or long term research on the issue. It is rather surprising to note that even though the Department of Telecommunications is the nodal Department for all telecommunication related issues, it is only the Department of Science and Technology which on the direction of Prime Minister's Office has constituted a Committee under Dr. N.K. Ganguly, former Director General (ICMR) on 1.10.2012 to examine the harmful effects from Mobile towers on the population living in the vicinity and for developing the frame of reference for calling out Request For Proposals (RFPs) for scientific assessment of health hazards and adverse impact on ecology. The Committee feel that DoT should be more sensitive and proactive in discharging its prime responsibility on such critical matters. The Committee, therefore, strongly recommend that the DoT must wholeheartedly associate itself with such long term research works being carried out within the country and also make regular budgetary allocation under a separate budget head of expenditure for research on health hazards from EMF radiation.

Action Taken by the Government

The EMF project of WHO has been conducting research on effects of EMF Radiation on human health since 1996. This project has participation from over 50 countries. It is pertinent to note that many of these studies have been going on for years as to understand the effect of EMF over the period of time. Thus these studies are not specific to developed countries alone. WHO has referred to approximately 25,000 articles published around the world over past 30 years, and based on an in-depth review of scientific literature, has concluded: "current evidence does not confirm the existence of any health consequences from exposure to EMF radiation". Since the effects on human beings are to be studied over a long period of time, further studies are going on around the world.

As has been given in Action taken report to recommendation no. 6 above, India specific scientific research by Indian Scientist/Engineers keeping in view Indian environment and conditions are being carried out and conclusive data from these researches will also become available in future. Till the time conclusive data from these researches becomes available, research done by reputed international agency like WHO, ICNIRP, etc. are to be relied on.

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Comments of the Committee

(Please see Para No. 12 of Chapter I)

Recommendation (Para No. 11)

Need for exploring new technological Innovations

Introduction of low power radiating antennae like Micro, Pico and Femto

During the examination of the subject, the Committee were informed by one of the experts of the field that high power radiating antennae could be avoided in high density populated areas by deploying low power radiating BTSs such as Micro, Pico and Femto which would be more advantageous in terms of elimination of fear of health hazards due to high radiation from mobile towers and safety of the buildings. These BTSs could be powered by solar or hybrid systems thus saving precious fuel and reducing carbon emission, saving huge quantities of steel and clearing the skyline of cities and towns. The Committee were also informed that these technologies have been adopted in developed countries. The Department, in its response has informed the Committee that these technologies are meant for very small/confined areas and would not be suitable to provide the coverage that can be sustained through outdoor BTSs. In the case of Femto, however, the Department has stated that it is expected to be used by the Telecom Service Providers in due course. In this regard, the Committee would like the Department to seriously explore the option of utilising such technologies in our country especially in highly populated urban cities by implementing some pilot projects in selected areas to ascertain its feasibility. The Committee may be apprised of the initiatives taken in this regard.

Action Taken by the Government

In-building solutions already exist in some urban areas, provisioned by the service providers as per the coverage considerations and feasibility. The provisions for promoting In-Building Solutions (IBS) have also been made in National Telecom Policy (NTP)-2012. However, these technologies are meant for coverage in a very small/confined area. These may reduce the emission in that confined area but will not be able to provide the coverage that is sustained through outdoor BTS for providing seamless mobile connectivity. For street coverage, BTS is the only desirable option.

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Recommendation No. 12

Installation of LED based EMR meters

The Committee take note of a suggestion contained in one of the memorandum received by them that in every mobile tower there should be an indicator that shows the radiation level and if that level crosses a pre-determined limit, the device should automatically shut down the tower till the problem is rectified. It has also been suggested that such meter should display green signal if EMR are below prescribed limits and must turn red through yellow in case some unauthorized increase in tower capacity is introduced

by operators and all mobile towers must be equipped with sending GPRS based EMR data to some Central Control Room where the competent authority can monitor errant/ malfunctioning tower with exceeding EMR limits. The Committee, however, feel highly disappointed at the lukewarm response of the DoT to such innovative ideas/ suggestions as the same is reflected in its stubborn response that there is no need for continuous monitoring of radiation pattern from telecom towers and there is no such low cost meter that can make precision measurement and declare non- compliance. The DoT has gone on to say that such meter is not a solution and moreover, no manufacturer has approached TEC for testing such product.

The Committee feel that there is an urgent need for the Department to explore new scientific innovations to address the growing public apprehensions about the ill-effects of mobile tower radiations in view of the near total absence of any information to the public regarding the level of EMF radiation being emitted by towers. The Committee, therefore, recommend that the DoT must play a proactive role in exploring new technological ideas and innovations and ,if necessary, also involve premium scientific institutes across the country for development of such products like the suggested LED based EMR meters and setting up of centralized monitoring system which would strengthen the existing monitoring mechanism and will go a long way in allaying the public fear on the issue.

Action Taken by the Government

The LED based EMR meters available in the market are not based on acceptable standards for measurement of electromagnetic field exposure. As the device does not follow any standard, wrong flashing of LEDs on these devices will cause misgivings among the public. Therefore, it may not be desirable to encourage such devices. The measuring instruments used by TERM Cells for EMF audit are designed and manufactured to follow standards and provide accurate EMF compliance status. Even the EMF measuring test sets that are being procured by TEC are required to conform to the technical specifications contained in TEC GR No. TEC/TX/GR/EMI.001/02.SEP 2011 on “EMF Strength Measuring Instrument in the frequency range of 30 MHz to 3/6 GHz”.

The main concern raised by the Standing Committee is regarding information to the public regarding the level of EMF radiation being emitted by towers. While a meter like the LED based EMR meters can only measure the EMF radiation, it does not solve the basic issue of providing information to public at large.

DoT is already in process of designing and implementing an EMF portal which is envisaged to provide a public interface for viewing the EMF compliance status of mobile towers, anywhere in India. The portal is meant to generate confidence among the public about effectiveness of the EMF compliance process in India. The portal will also provide a

common database based framework for TERM Cells, Operators, and Infrastructure Providers to manage RF technical parameter for handling EMF compliance workflows.

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Recommendation (Para No. 15)

Setting up of State/District Level Telecom Committees

The Committee note that the guidelines issued by DoT in 2012 and revised guidelines in 2013 inter-alia stipulates setting up of State and District Level Committees in each State consisting of officers from TERM Cells, State Administration, representatives of concerned Telecom Service Provider(s) and eminent public person etc. to effectively address public grievances relating to installation of towers and issues related to telecom infrastructure by holding regular interactions. The Committee are, however, unhappy to note that so far only two States viz. the States of Uttarakhand and West Bengal have formed such State Level Committees although their formation has been re-emphasized in the revised guidelines issued by DoT on 1 August, 2013. The Committee would like to attribute such Luke warm response of the State Governments towards formation of such important Committees, to the casual approach of the DoT as well as advisory nature of guidelines issued by them making their constitution by various States just discretionary. The Committee feel that formation of State/District Level Committees can prove to be a very effective tool in addressing public grievances and until and unless the Department pursue vigorously with the State Governments/UT Administrations, the formation of such important Committees would remain a pipedream only. The Committee, therefore, recommend that DoT must make all out efforts to expedite the formation of such Committees. The Committee also feel that to make the functioning of State/District level telecom Committees more effective, DoT may consider inclusion of elected representatives of local bodies/State Assemblies/Member of Parliament in the composition of these Committees. Alternatively, the work can be assigned to District/State Monitoring and Vigilance Committees constituted by Ministry of Rural Development. These Committee are monitoring the Schemes/programmes relating to Ministries of Rural Development, Drinking Water, Panchayati Raj and Power (Rajiv Gandhi Grameen Vidhyutikaran Yojna).

Action Taken by the Government

The guidelines issued are advisory in nature and it is up to the concerned State Governments to decide on formation of such committees. However, the State Governments have been apprised of the recommendations of the Standing Committee in this regard and they have been requested to expedite the formation of State and District Level Committees in each State.

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Recommendation (Para No. 16)

TERM Cells: Issues relating to shortage of manpower and equipment

The Committee note that the Telecom Enforcement Resource & Monitoring (TERM) Cells of the DoT have been assigned with an important task of cross checking the compliance of EMF radiation norms as prescribed by the Government for mobile towers. Apart from this, TERM Cells have been mandated to ensure compliance of licensing conditions by TSPs, interface between security agencies and TSPs, curbing of grey market activities, redressal of grievance of telecom subscribers in respect of deficiencies by TSP etc. and carrying out test audit of 10 per cent of the BTS sites on random basis. The Committee are, however, constrained to find out that the TERM Cells have been severely handicapped by shortage of manpower in effectively carrying out its mandate, especially annual testing of 10 per cent of total BTS sites (including existing and new ones) which has also been acknowledged by the Department. As per the information provided by the Department, the Committee note that during the period from November, 2010 to March 2011 and April, 2012 to March, 2013 only 3.5 and 4 per cent of the BTS were tested respectively against the mandate of randomly testing upto 10 per cent of the BTS sites. The Committee, therefore, have strong reasons to conclude that the other important activities of the TERM Cells are also being underperformed due to acute shortage of manpower. The Committee feel that not filling the existing vacancies of the TERM Cells amounts to conveniently ignoring the concerns of the public across the country over the possible health hazards from EMF radiations being emitted by telecom towers. Taking a very serious note of this sorry state of affairs, the Committee strongly recommend that the Department should take all necessary steps to strengthen the TERM Cells by filling up all the existing vacancies so that the Cells could effectively carry out their mandate. In the opinion of the Committee any further delay in filling up the existing vacancies would be only at the cost of ignoring the public concerns and defeating the very purpose of constitution of the TERM Cells.

Action Taken by the Government

To ensure adequate Manpower in TERM Cells, ITS officers were deployed as per the decision of Cabinet. The present working strength of ITS Group 'A' officers in TERM Cell including DoT Head Quarters are as under :

- Higher Administrative Grade (HAG)=1
- Senior Administrative Grade (SAG) = 69
- Junior Administrative Grade (JAG) =98
- Senior Time Scale (STS) = 37
- Junior Time Scale (JTS) =37

The cadre review of ITS Group 'A' services is also under process and adequate augmentation of number of ITS officers in TERM Cells has been proposed in the exercise.

In addition to above ITS officers, 177 numbers of additional support officers & staffs are attached in different TERM Cell which include 37 Junior Telecom Officers (JTOs), 55 Sub Divisional Engineer (SDEs), 3 Sr. SDE, 32 Assistant Director (AD), 8 Divisional Engineer (DE) and 42 others i.e. Sr Telecom Office Assistant (Sr. TOA), Private Secretary (PS), Steno, Personal Assistant (PA), etc.

Further to meet the urgent requirement of TERM Cells, it was decided with the approval of Hon'ble MOC&IT to depute 7 Group 'B' officers of BSNL purely on loan basis in each TERM Cell of DOT. Accordingly, the order was issued on 26.10.2010. The said arrangement of Gr'B' officers of BSNL was made initially for a period of two years. In view of constitutional requirement, with the approval of Secretary (T), BSNL has been requested to continue the arrangement of deputing seven (7) Gr.B Officers(Sr.SDE/SDE/JTO) on purely temporary and stopgap arrangement basis in each TERM Cell for a further period of two years vide order dated 09.01.2013.

(Ministry of Communications & Information Technology /Department of Telecommunications O.M. No. 12-25/2010-CS-III(Pt. II)

Recommendation No. 18

Issues relating to 'Self Certificate'

The Committee note that based on the recommendation of an Inter- Ministerial Committee (IMC) report, norms for exposure limit for EMF Radiation emitted by BTS towers have been reduced to 1/10th of the existing limits prescribed by ICNIRP w.e.f. 1 September, 2012. The Committee are, however, not at all satisfied with the existing mechanism which has been adopted by DoT for ensuring compliance of the prescribed limits. In this regard, the Committee observe that instead of conducting verification departmentally or getting the same done by some independent agency, the Department is relying only on the 'self-certificates'furnished by the Telecom Service Providers themselves. The only safeguard evolved by the DoT is the requirement of carrying out inspection of 10 per cent of randomly selected BTS sites by the TERM Cells of the DoT which are woefully lagging behind in carrying out their task due to the acute shortage of both the manpower as well as the equipment. The Committee also note that the method of 'Self-Certification' has been adopted by the Department just by consulting the stakeholders who are mainly Telecom Service Providers without studying the detailed implementation procedure/method followed in other countries. The other deterrent which has been put into place is that in case of violation of prescribed limits, a provision for imposing penalty of Rs. 5 lakh per BTS per Telecom Service Providers has been prescribed. The Committee strongly deprecate that the Department is not even clear on the periodicity of furnishing of 'self-certification'of

BTSs by the concerned TSPs. While the Department has informed the Committee in the Background Note that licensees should conduct audit and provide self- certificate annually as per the procedure prescribed by Telecom Engineering Centre (TEC), the DoT in their subsequent written reply has stated that the periodicity of submission of 'self-certification' by TSPs was once in two years because radiation parameters of the BTS remain constant, unless changed by TSPs. Considering the fact that radiation parameters of the BTS are totally in the hands of the TSPs and can be re-set by the TSPs at any point of time in the absence of any kind of constant monitoring mechanism, the Committee are of the strong view that no purpose is being served by requiring submission of 'Self-Certificate' by TSPs only once in two years which otherwise also is too long a period. The Committee are of the view that 'Self-Certification' method provide a freehand to TSPs to indulge inmis-information. The Committee also feel that considering lack of manpower and testing equipment of TERM Cells, the majority of the TSPs are enjoying a kind of complete immunity from detection of any violation on their part when it comes to complying with the radiation norms of BTSs towers. The Committee, therefore, recommend that to make the monitoring mechanism more stringent, the Department should explore other options, such as evolving a constant monitoring mechanism of EMF radiation from all BTSs on real time basis or conducting surprise tests, conducting an independent 'Third Party Audit' of BTS towers etc. besides finding out the practices followed in other countries in coming out with its own effective procedure."

Action Taken by the Government

The concerns raised by the standing committee regarding auditing of self certificates have already been addressed in the TEC Test Procedure (OCT.2012 issue) in section 18(a) by providing a changed procedure as follows:

> "*Before undertaking measurement, the Tx Power of the Carriers (BCCH's for GSM and Total Channel Power RMS 86 Pilot Power for CDMA / 3G) will be verified using a BTS Site Master / Spectrum Analyzer (with option for Power measurement) with appropriate couplers / Attenuators, if feasible without causing disruption of service. Further, NMS/EMS snapshot shall be provided to ascertain the normal BTS power in the recent past*."

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Recommendation No. 19

<u>Effective implementation of prescribed Specific Absorption Rate (SAR) Value for mobile handsets</u>

The Committee while observing that Specific Absorption Rate (SAR) is a measure of the rate at which energy is absorbed by the human body when exposed to a radio frequency electromagnetic field, find that DoT, in the year 2008, notified for compliance of Mobile Handsets being manufactured in India to conform to ICNIRP prescribed SAR limit of

2 W/kg in the frequency range of 10 MHz to 10 GHz and subsequently revised the same to 1.6 watt/kg averaged over a mass of 1 gram tissue w.e.f. 1 September, 2013 for all mobile handsets manufactured or imported in India. The Committee also note that to ensure effective implementation of SAR norms so prescribed, DoT has issued instructions that all mobile handsets manufacturers, both indigenous and imported, shall provide a self declaration in respect of SAR value based on certificate issued from Internationally Accredited Labs (ILAC) or accredited by TEC, India to TEC with a copy to DoT for compliance and necessary action. It has also been brought to the notice of the Committee that as per Indian Cellular Association (ICA) all the new design mobile phones being manufactured for domestic market are compliant to new norms and Mobile Manufacturers Forum have made a provision for display of SAR value by dialing *#07# in new mobile handsets in order to verify their compliance. The Committee, however, are concerned to note that as regards penalty provisions in the cases of detection of non-compliance with the prescribed SAR norms, the reply of DoT is vague and evasive according to which the quantum of penalty will be as per the provisions in the applicable Acts/Rules. The reply gives an impression that that there is no clarity in the DoT on the quantum of penalty to be imposed on the defaulter. The DoT has failed to furnish any information in respect of number of violations detected so far. The Committee, therefore, feel that the provision of penalty in case of any violation is still unclear and hence more specific provisions for penalty are required to be laid down at the earliest for ensuring meaningful compliance with SAR norms. The Committee, therefore, strongly recommend that the Government must prescribe precise and specific provisions on penalty in such cases and may be apprised of the action taken in this regard. The Committee also desire that efforts should also be made by the Department for greater dissemination of information relating to Do's and Don'ts of mobile phones users and revised SAR value by bringing out a handbook in Hindi, English and regional languages and making the same available to mobile handset customers at the point of sales/retail shops.

As regards availability of adequate infrastructure for verifying compliance of Mobile handsets with the prescribed SAR norms, the Committee would like to refer to the recommendation made by them in their 43rd Report (15th Lok Sabha) wherein the Committee had expressed concern at the scarcity of the available infrastructure for meeting the requirement of verification of SAR values of mobile handsets of a vast variety involving a large number of manufacturers, while observing that only one SAR lab has been set up by the DoT at new Delhi and another being set up at Mumbai. The Committee have strongly recommended that DoT must undertake a thorough review of the number of SAR Labs required to be set up in the country for carrying out this task as well as making the verification of all models of mobile handsets by SAR Labs a mandatory provision. Subsequently, the Committee in their 51st Report on action taken by the Government on the said recommendation, had expressed their unhappiness at the reply of the Government that all handset manufacturers of both indigenous as well as imported are only required to provide a self-declaration in respect of SAR value subject to TEC audit as and when

required. While strongly feeling that the DoT should be equipped with sufficient number of SAR Labs so as to keep a strict vigil on the manufacturers with regard to adhering to SAR norms, the Committee had reiterated their recommendation and desired that DoT should undertake thorough review of SAR Labs required in the country and take expeditious steps to set up the Labs. The Committee desire that they may be apprised of the action taken in this regard.

Action Taken by the Government

DoT has issued instructions that all the mobile handset manufacturers, both indigenous and imported, shall provide a self declaration in respect of SAR value based on certificate issued from internationally accredited labs i.e. labs accredited by ILAC (International Laboratory Accreditation Corporation) or Telecom Engineering Centre (TEC), India. Such self declared SAR limits shall be subjected to TEC audit as and when required. Instructions have been issued to Indigenous Mobile Manufacturers to provide SAR value information of the mobile handsets, which shall be available on the manufacturer's website and in the handset's manual. The information on SAR values shall be made available to the consumer at the point of sale. Further, manufacturer's mobile handset booklet shall contain certain safety precautions.

Telecom Engineering Centre has finalized the standards for mobile handsets. Further an amendment to Indian Telegraph Act has been proposed to give statutory backing to the provisions.

The Department is making effort to evolve a suitable strategy to disseminate information about SAR limits in different Indian languages in consultation with Telecom Equipment Manufacturers' Association (TEMA)/Indian Cellular Association (ICA).

TEC is planning another SAR laboratory at Mumbai for which funds are being sought.

(Ministry of Communications & Information Technology /Department of Telecommunications O.M. No. 12-25/2010-CS-III(Pt. II)

Recommendation No. 20

<u>Need for Introduction of Green energy in Telecom Sector</u>

The Committee feel concerned to note that there is an average fuel consumption of 8760 liters of diesel every year per tower, assuming 8 hours of operation of DG sets and on this assumptions, billions of liters of this fossil fuel is consumed in the country every year. In this regard, the Committee note that based on the recommendations of TRAI dated 12 April, 2011 on 'Approach towards Green Telecommunication' for gradual introduction of green energy in telecom sector, the DoT on 23 January, 2012, has issued directions to

Telecom Service Providers which envisaged that alteast 50 per cent of rural towers and 20 per cent of urban towers are to be powered by hybrid power (RET + Grid Power) by 2015, while 75 per cent of rural towers and 33 per cent of urban towers to be powered with (RET + Grid Power) by 2020. The Committee have been informed that based on continuous interactions by TRAI with the TSPs, their associations, i.e., ISPAI, ACTO, COAI & AUSPI have submitted 'Voluntary Code of Practice' to reduce the carbon footprint of their network operations. It has also been brought to the notice of the Committee that DoT has constituted a committee to prepare a roadmap to facilitate- increased use of Renewable Energy Technologies (RETs), development of sector specific schemes and analyzing the viability gap funding for deployment of RETs in Telecom.

While appreciating the various initiatives being undertaken by TRAI and DoT, the Committee are of the view that the issue of fossil fuel consumption to power telecom towers and its polluting nature deserves serious attention. Moreover, the Government has to spend huge amount of money on diesel subsidy and it may not be desirable to consume billions of liters of diesel in powering the telecom towers.

The Committee also feel that the 'Voluntary Code of Conduct' adopted by various telecom associations would be too weak unless backed by some regulation or some kind of mandatory provision. The Committee, therefore, recommend that the Department should take all necessary steps to effectively implement the targets as envisaged to be implemented by 2015 and 2020 for powering the urban and rural telecom towers by hybrid power i.e. using more and more energy from renewable energy sources like wind and solar energy. The Committee while taking into consideration the objectives of the NTP-2012 which inter-alia include enhanced and continued adoption of green policy in telecom and incentivize use of renewable resources for sustainability, desire that to promote voluntary introduction of green energy by Telecom Service Providers, Government may explore the possibility of giving them some kind of incentives/ rebates on license fee or reduction in levy rates. In this regard, the Committee feel that the Department may also consult the Ministry of New and Renewable Energy who are currently implementing the Jawaharlal Nehru National Solar Power Mission besides ensuring that the Committee constituted by DoT completes its task of preparing the roadmap to facilitate increased use of Renewable Energy with due promptitude.

Action Taken by the Government

DoT's vide its Letter dated 23.01.2012 on implementation of Green Technologies in Telecom Sector has issued following directions to all CMTS /UASL/Basic Service Licensees – "*At least 50% of all rural towers and 20% of the urban towers are to be powered by hybrid power (Renewable Energy Technologies (RET) + Grid power) by 2015, while 75% of rural towers and 33% of urban towers are to be powered by hybrid power by 2020.*" In order to ensure implementation of these instructions, All CMTS/UASL/Basic Service Licensees are directed to submit service area wise quarterly report to respective TERM Cells of DoT.

DoT has also taken necessary steps in this regard by constituting a committee comprising of representatives of DOT/ Ministry of new & renewable Energy (MNRE) and other stakeholders to prepare a roadmap to facilitate increased use of Renewable Energy Technologies (RETs), development of sector specific schemes and analyzing the viability gap funding for deployment of RETs in telecom. Further, an interaction meet for moving further was also held on powering the telecom towers through Renewable Energy in MNRE on 13/01/2014 under the chairmanship of Secretary, MNRE with DoT & MNRE officers, representatives of Telecom industry associations, RESCOs and other stakeholders.

The Renewable Energy Technologies (RET) Committee, comprising of officers of DoT, MNRE and representatives of other stakeholders, has submitted its report to DoT on 01.08.2014. Apart from other recommendations, the Committee has also recommended to incentivize the use of renewable resources. This and other recommendations of the committee are under examination in DoT.

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CHAPTER –III

RECOMMENDATION / OBSERVATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF THE REPLIES OF THE GOVERNMENT

--NIL--

CHAPTER –IV

RECOMMENDATION / OBSERVATIONS IN RESPECT OF WHICH REPLIES OF THE GOVERNMENT HAVE NOT BEEN ACCEPTED BY THE COMMITTEE AND WHICH REQUIRE REITERATION

Recommendation No. 13

Supply of sub-standard mobile handsets to India by reputed global manufacturers

The Committee note from a memorandum submitted to them by an expert of the field that more than 90 per cent of the mobile handsets are being supplied in India by reputed global manufacturers like Nokia, Samsung, Blackberry etc. While these reputed global manufacturers are strictly complying with all the prescribed safety limits when supplying the mobile handsets to countries like USA, Japan and European Countries, they are resisting the prescribed norms when it comes to supplying mobile handsets to India, probably taking the country for granted. From the response of DoT, the Committee feel perturbed to find that no standards for mobile handsets have so far been prescribed in the country and the same are still under deliberation of a Technical Committee of the Bureau of Indian Standards (BIS). The Committee have been informed that even the standards which have been finalized by TEC have not been implemented. The Committee are unable to understand the reasons for the delay in formulation of standards for mobile handsets in the country which in the opinion of the Committee is an issue of paramount importance in ensuring standardization and quality control of mobile handsets being imported or manufactured in the country. The Committee while deprecating such sorry state of affairs prevailing in the country, strongly recommend that DoT must make all possible efforts in finalizing and implementing the standards for mobile handsets without any further loss of time and the Committee must be apprised of the progress made in this regard.

Action Taken by the Government

Telecom Engineering Centre has finalized the standards for mobile handsets. Further an amendment to Indian Telegraph Act, has been proposed to give statutory backing to the provisions.

(Ministry of Communications & Information Technology /Department of Telecommunications O.M. No. 12-25/2010-CS-III(Pt. II)

Comments of the Committee
(Please see Para No. 15 of Chapter I)

Recommendation No. 14

Need for Effective Grievance Redressal Mechanism

The Committee note with concern that as the things stand today, the Grievance Redressal Mechanism available to the public in respect of EMF radiation from mobile towers located in their immediate vicinity is either totally insufficient or non-existent. The

public has no means to verify as to whether the radiation from towers to which they are being exposed continuously is within the prescribed limits and whom to approach to allay their fears as no such details are required to be mentioned at the tower site. The Committee note that the only existing Complaint Handling System for Electro Magnetic Field (EMF) Radiation from Mobile Towers has been launched by DoT in Mumbai on 4th October, 2012 through an online facility on DoT website http://www.dot.gov.in and there is a proposal to extend this facility to other metros also. The Committee, however, note that even after the lapse of more than one year, the facility has not been extended to any other metro. Further, no publicity has been given with respect to online complaints redressal mechanism. No wonder that most of the people are not aware of existence of such a mechanism. The Committee strongly feel that above grievance redressal mechanism of the Department is too little, too inadequate and is akin to making a deliberate attempt to ring fence the TSP and Infrastructure Providers from any public complaints and grievances. Holding the DoT squarely responsible for the absence of any effective mechanism for redressal of public grievances, the Committee recommend that urgent efforts should be made to extend "Complaint Handling System for Electro Magnetic Field (EMF) Radiation' to other metros of the country along with an aggressive campaign to make the public aware of the existence of such Complaint Handling System. The Committee further recommend that the suggestion to display the information regarding name and address of the operators, contact person details, address of complaint redressing authority, level of EMF radiation etc. at the entry point of the facility of the tower, which is being examined by DoT in consultation with telecom service providers and infrastructures providers, should be finalized and implemented at the earliest. The Committee, at the same time, feel that such consultation process would be more meaningful if members of the public forum, Resident Welfare Associations, NGOs etc. are also consulted in evolving an effective Grievance Redressal Mechanism.

Action Taken by the Government

The online complaint handling system for Mumbai was launched by DoT on 04.10.2012. It was envisaged that based on the response received for online complaint handling system of Mumbai, the facility may be extended to 3 other metros also. However, the total no of monthly complaints booked, for which the testing fee has been realized, on the online complaint handling system for Mumbai has reduced drastically from 135 in October 2012 to 13 in February 2014. Considering the small no of complaints being received the facility has not been extended to other metros. However, there are other mechanisms also for quick and effective redressal of public grievances, which include online booking of complaint on CPGRAMS web portal which are attended by TERM Cells. TERM Cells also carry out testing of EMF radiation acting on the complaints received directly by general public. In addition TERM Cells are testing up to 10% of the total BTSs annually for compliance to the DoT norms for EMF radiation. Apart from this a National EMF portal is

also under process of development which will facilitate the general public in knowing the compliance status of any BTS.

(Ministry of Communications & Information Technology /Department of Telecommunications O.M. No. 12-25/2010-CS-III(Pt. II)

Comments of the Committee
(Please see Para No. 18 of Chapter I)

CHAPTER –V

RECOMMENDATION / OBSERVATIONS IN RESPECT OF WHICH REPLIES ARE OF INTERIM IN NATURE

Recommendation No. 10

International practices and countries having lower emission standards

From the information provided by DoT, the Committee note that countries like China, Russia, Italy, Poland etc. are having more stricter norms on radiation exposure than India. On the contention raised in one of the memorandum received by the Committee that towers in China are emitting 100 times less radiation even though there are more mobile users in China than in India, the DoT in its written reply submitted that the complete information about lower radiation norms in China is not available including pros and cons of such norms. The Committee deplore such callousness on the part of DoT in not keeping itself abreast with the practices followed in other countries including China that have adopted lower emission norms than in India. The Committee feel that merely keeping a watch on various reports of WHO and ITU without knowing their bases, as is being done by DoT is uncalled for as such an approach would result in formulating lopsided opinion and norms. The Committee strongly recommend that DoT should always keep itself updated with the best practices followed in the world and take concerted steps to implement them as suitable to India.

Action Taken by the Government

All efforts are being made by DoT to get the latest information on the subject from other countries. The regulatory bodies and the departments dealing with the subject in other countries have been contacted to get the information about the latest developments in other countries. However, DoT will keep in view the recommendations of the Standing Committee regarding keeping itself updated with the best practices followed in the world and taking concerted steps to implement them as suitable to India.

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Recommendation No. 17

Shortage of equipment in Term Cells

The Committee find it surprising to note that the TERM Cells are carrying out the testing of the BTSs by using the test instruments provided by Telecom Service Providers instead of using their own equipment which unfortunately has not so far been procured by the Department. In this regard, while seriously questioning the credibility of using the

equipment provided by TSPs, the Committee in their 43rd Report on Demands for Grants (2013-14) which was presented to Lok Sabha on 30th April, 2013 had highlighted the lack of testing equipment and had strongly recommended that serious efforts must be made by DoT to procure the requisite number of test equipment at the earliest to become self-sufficient in EMF testing besides promoting domestic production of the same instead of relying only on import. Again in their 51st Report on Action Taken by the Government on the recommendations contained in their 43rd Report presented to Lok Sabha on 16th December, 2013, the Committee had expressed their serious displeasure at the lack of any urgency being shown by the Department in procuring the EMF testing equipment and had reiterated their earlier recommendation. In this background, the Committee view that any further delay in procurement is bound to give an impression that there is a tacit understanding between DoT and TSPs in taking any concrete steps for measuring compliance with EMF exposure limits. The Committee, therefore, once again strongly recommend that all out efforts must be made by the Department to procure such test equipment at the earliest. Further, domestic production of these equipment should be promoted to save precious foreign exchange and to ensure that these equipment do not remain as an exclusive monopoly of few TSPs, but are also available to the concerned individuals/public organizations so that they may also freely use such testing equipment themselves and effectively work as a watchdog in ensuring compliance of prescribed safety norms on radiation exposure.

Action Taken by the Government

Tender for procurement of 69 set of Test Equipment for the TERM Cells was floated & opened by Telecommunication Engineering Center (TEC) on 12.04.2013. However the tender had been cancelled later due to non-responsive bids. TEC has floated a fresh tender for procurement of Test Equipment for the TERM Cells again and it is expected that requisite equipment will be available to the department very soon. All out efforts are being made by the Department to procure such test equipment at the earliest.

(Ministry of Communications & Information Technology /Department of Telecommunications O.M. No. 12-25/2010-CS-III(Pt. II)

Recommendation No. 21

<u>Security related concerns due to imported telecom equipments</u>

The Committee note that the Indian Telecom Sector is heavily dependent on imported equipment and such telecom equipment if not tested properly could cause security concerns due to vulnerabilities embedded and malware in them. In this regard, the Committee note that for securing the telecom network, DoT has issued an amendment on 31 May, 2011 making the licensee completely and totally responsible for security of their networks and mandating that licensee should induct only those network elements which

have been got tested as per relevant contemporary Indian or international security standards. Further, the licensees shall audit their networks or get the network audited from security point of view once a year from a network audit and certification agency. The Committee also note that a penal provision of upto Rs. 50 crore has been prescribed for breach of security by vendor or supplier who supplied the hardware/software that caused the security breach could be blacklisted or their license cancelled besides initiation of criminal proceedings under the relevant Acts.

To the surprise of the Committee, the DoT knowing fully well that telecom equipment, if not tested properly could cause security concerns, has not so far conducted any study to ascertain the security implications and risks involved due to dependence on imported equipment. What is even more dismaying to the Committee is that not a single authorized and certified agencies/labs for testing telecom equipment has been set up in the country. The Department has taken the plea that understanding the test standards and developing the test processes and testing tools thereto, is a complex phenomenon and it is taking some time to come out with requisite indigenous security standards. The Committee also note that setting up of telecom equipment testing lab at the Indian Institute of Science (IISc), Bangalore, has run into rough weather due to refusal of foreign vendors to share their design details with the premier academic institute as it could hurt their business interests and as a via media, the Government is considering establishment of a Telecom Testing and Security Certification Centre under it. The Committee find the reluctance of the industry to comply with the indigenous standards and testing within India unacceptable as the committee feel that national security should not be compromised and sacrificed at an altar of commercial profit. The Committee strongly recommend the Department to take all necessary steps for the early establishment of Telecom Testing and security certification centre in the country at the earliest.

It is also apparent to the Committee that in the absence of any authorized and certified agencies/labs for testing telecom equipments, no security audit of telecom networks is presently possible to be conducted in the country and the officers posted for security audit as an ad-hoc arrangement are still studying the subject matter before initiating any security audit work to verify the compliance by the Telecom Service Providers. Feeling extremely concerned that the Department has done precious little for the security of telecom networks in the country, the Committee strongly recommend that urgent measures should be taken by the Department for the establishment of the proposed Telecom security Directorate to ensure compliance of security conditions by the Telecom Service Providers instead of relying on ad-hoc arrangement.

Action Taken by the Government

For the early establishment of the Telecom Testing and Security Certification (TTSC) centre in the country a draft 'Scheme of Things for Security Testing of Telecom Equipment'

was prepared and consultations were held with National Security Council Secretariat (NSCS) and Ministry of Home Affairs (MHA). As an outcome of the consultations, it has been decided that eligibility criteria and the evaluation criteria for accrediting of Telecom Security Testing labs may be decided by a Committee consisting of representatives from DoT, DeitY, MHA, NTRO and DRDO and IISc, Bangalore. Further, the test suite for each telecom network element may also be discussed and got vetted from this Committee. In addition, another Committee has also been formed to decide on financial issues like charges for registration of the lab, evaluation fees to be charged by the lab, initial accreditation fee, and annual accreditation fees to be paid by the lab, etc. Once the recommendations/ reports of these committees are received, the 'Scheme of the Things' will be finalized. Based on the approved 'Scheme of Things' an Expression of Interest (EOI) for establishment of Security Testing labs, is proposed to be floated.

To ensure compliance of security conditions by the Telecom service providers, the department has prepared a detailed proposal for establishment of Telecom Security Directorate, which is under financial vetting. Telecom Security Directorate has inter alia provision for Telecom Testing and Security Certification (TTSC) centre and Security Audit. Officers for the same have been provided and have conducted study of relevant test standards, test processes and test tools and have developed test suites for a few network elements. They have also been coordinating and interacting with identified agencies for the finalization of the Scheme of Things. A draft 'Security Audit Framework Document' has also been formulated for security audit of telecom networks.

(Ministry of Communications & Information Technology /Department of Telecommunications O.M. No. 12-25/2010-CS-III(Pt. II)

New Delhi;
11 August, 2015
20 Shravana, 1937 (Saka)

ANURAG SINGH THAKUR,
Chairperson,
Standing Committee on
Information Technology.

Annexure-II

ANALYSIS OF ACTION TAKEN BY THE GOVERNMENT ON THE RECOMMENDATIONS/OBSERVATIONS CONTAINED IN THEIR FIFTY-THIRD REPORT (FIFTEENTH LOK SABHA)

[Vide Paragraph No. 5 of Introduction]

(i) Observations/ Recommendations which have been accepted by the Government

Para Nos.:- 1,2,3,4,5, 6,7,8,9, 11,12,15,16,18,19 and 20

Total	16
Percentage	72.72

(ii) Observations/ Recommendations which the Committee do not desire to pursue in view of the replies of the Government

Para No.:- Nil

Total	Nil
Percentage	0.00

(iii) Observations/ Recommendations in respect of which replies of the government have not been accepted by the Committee and require reiteration

Para Nos.:- 13 and 14

Total	02
Percentage	9.09

(iv) Observations/ Recommendations in respect of the reply which is of interim nature

Para Nos.:- 10,17 and 21

Total	03
Percentage	13.63