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**STANDING COMMITTEE ON
INFORMATION TECHNOLOGY
(2013-14)**

FIFTEENTH LOK SABHA

**MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY
(DEPARTMENT OF TELECOMMUNICATIONS)**

**NORMS FOR THE SETTING UP OF TELECOM TOWERS, ITS HARMFUL EFFECTS AND
SETTING UP OF SECURITY STANDARDS IN EXPANSION OF TELECOM FACILITIES**

FIFTY-THIRD REPORT



**LOK SABHA SECRETARIAT
NEW DELHI**

February, 2014/Magha, 1935 (Saka)

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Presented to Lok Sabha on 12th February, 2014

Laid in Rajya Sabha on 12th February, 2014



LOK SABHA SECRETARIAT

NEW DELHI

February, 2014/Magha, 1935 (Saka)

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COMPOSITION OF STANDING COMMITTEE ON INFORMATION TECHNOLOGY (2010-11)

Shri Rao Inderjit Singh - Chairman

Lok Sabha

2. Shri Rajendra Agrawal
3. Shri Nikhil Kumar Choudhary
- *4. VACANT
5. Dr. Charles Dias
6. Shri Rajen Gohain
7. Smt. Darshana Vikaram Jardosh
8. Shri Sadashivrao Dadoba Mandlik
9. Shri Inder Singh Namdhari
10. Shri Adhalrao Shivaji Patil
11. Shri Abdul Rahman
12. Shri Prem Das Rai
13. Shri Tufani Saroj
14. Shri Tathagata Satpathy
15. Smt. M. Vijaya Shanti
16. Dr. Bholu Singh
17. Shri Dhananjay Singh
18. Shri Sushil Kumar Singh
19. Shri C. Sivasami
20. Shri Dharmendra Yadav
21. Vacant

Rajya Sabha

22. Shri M.P. Achuthan
- *23. Shri Mohammed Adeeb
24. Shri Salim Ansari
- *25. Shri Rajeev Chandrasekhar
- *26. Shri Rajkumar Dhoot
27. Shri Prabhat Jha
28. Prof. Alka Balram Kshatriya
29. Shri Ravi Shankar Prasad
30. Shri P. Rajeeve
31. Shri Jesudasu Seelam

* Nominated to the Committee w.e.f. 21st September, 2010.

** Shri Milind Deora ceased to be a member of the Committee consequent on his appointment as Minister of State for Communications and Information Technology on 12th July, 2011.

COMPOSITION OF STANDING COMMITTEE ON INFORMATION TECHNOLOGY (2011-12)

Shri Rao Inderjit Singh - Chairman

Lok Sabha

2. Shri Rajendra Agrawal
3. Smt. Sarika D.S. Baghel
4. Shri Nikhil Kumar Choudhary
5. Shri H.D. Devegowda
6. Dr. Charles Dias
- *7. Shri A. Ganeshamurthi
8. Shri Rajen Gohain
9. Smt. Darshana Jardosh
10. Dr. Tarun Mandal
11. Shri P.R. Natarajan
12. Shri Tapas Paul
13. Shri Tathagata Satpathy
- #14. Smt. Supriya Sule
15. Smt. Seema Upadhyay
16. Vacant
17. Vacant
18. Vacant
19. Vacant
20. Vacant
21. Vacant

Rajya Sabha

- @22. Shri Joy Abraham
23. Shri M.P. Achuthan
24. Shri Mohammed Adeeb
25. Shri Salim Ansari
26. Shri Rajkumar Dhoot
- **27. Dr. Bhushan Lal Jangde
28. Shri Prabhat Jha
29. Prof. Alka Balram Kshatriya
30. Shri Jesudasu Seelam
- @ 31. Shri Sachin Ramesh Tendulkar

* Nominated to the Committee w.e.f. 29th November, 2011.

** Nominated to the Committee w.e.f. 4th May, 2012 vice Shri P. Rajeeve, M.P. Rajya Sabha

Nominated to the Committee w.e.f. 17th May, 2012

@ Nominated to the Committee w.e.f. 11th July, 2012 vice Shri Rajeev Chandrasekhar and Shri Ravi Shankar Prasad, M.P. Rajya Sabha

COMPOSITION OF THE STANDING COMMITTEE ON INFORMATION TECHNOLOGY

(2012-13)

Shri Rao Inderjit Singh - Chairman

Lok Sabha

2. Shri Abdul Rahman
3. Shri RajendraAgrawal
4. Shri Raj Babbar
5. Shri Nikhil Kumar Choudhary
- * 6. Shri Khagen Das
7. Shri A. Ganeshamurthi
8. Shri RajenGohain
9. Smt. DarshanaJardosh
10. Shri H. D. Kumaraswamy
11. Shri BaidyaNath Prasad Mahato
12. Shri Sadashivrao D. Mandlik
13. Dr. Thokchom Meinya
- ** 14. Dr. Prasanna Kumar Patasani
15. Shri Tapas Paul
16. Shri Radhe Mohan Singh (Ghazipur)
17. Smt. Seema Upadhyay
18. Vacant
19. Vacant
20. Vacant
21. Vacant

Rajya Sabha

22. Shri Joy Abraham
23. Shri Mohammed Adeeb
24. Shri Javed Akhtar
25. Shri Salim Ansari
26. Shri Bharatsinh Prabhatsinh Parmar
- # 27. Dr. Kanwar Deep Singh
28. Shri Sachin Ramesh Tendulkar
29. Dr. C.P. Thakur
- @ 30. Vacant
31. Vacant

* Nominated to the Committee w.e.f. 13.12.2012 vide Shri Ramsinh Rathwa, vide Lok Sabha Bulletin Part – II dated 13.12.2012.

** Nominated to the Committee w.e.f. 09.01.2013 vide Lok Sabha Bulletin Part-II dated 09.01.2013.

Nominated to the Committee w.e.f. 28.03. 2013 vide Rajya Sabha Bulletin Part-II dated 01.04.2013

@ Shri Rajkumar Dhoot, M.P. Rajya Sabha resigned on 11.02.2013 from Committee.

COMPOSITION OF THE STANDING COMMITTEE ON INFORMATION TECHNOLOGY
(2013-14)

Shri Rao Inderjit Singh - Chairman

Lok Sabha

2. Shri Rajendra Agrawal
3. Shri Raj Babbar
4. Shri Nikhil Kumar Choudhary
5. Shri Khagen Das
6. Shri A. Ganeshamurthi
7. Shri Rajen Gohain
8. Smt. Darshana Jardosh
9. Shri Baidya Nath Prasad Mahato
10. Shri Sadashivrao D. Mandlik
11. Dr. (Prof.) Thokchom Meinya
12. Shri Tapas Paul
13. Dr. (Prof.) Prasanna Kumar Patasani
14. Shri Abdul Rahman
15. Shri Radhe Mohan Singh (Ghazipur)
16. Smt. Seema Upadhyay
17. **Vacant**
18. **Vacant**
19. **Vacant**
20. **Vacant**
21. **Vacant**

Rajya Sabha

22. Shri Joy Abraham
23. Shri Mohammed Adeb
24. Shri Javed Akhtar
25. Shri Salim Ansari
26. Shri B.K. Hariprasad
27. Shri Basawaraj Patil
28. Dr. Kanwar Deep Singh
29. Shri Sachin Ramesh Tendulkar
30. Dr. C.P. Thakur
31. **Vacant**

SECRETARIAT

1. Shri Brahm Dutt - Joint Secretary
2. Shri N.C. Gupta - Director
3. Shri Ajay Kumar Garg - Additional Director
4. Shri Shangreiso Zimik - Executive Officer

INTRODUCTION

I, the Chairman, Standing Committee on Information Technology (2013-14), having been authorized by the Committee to present the Report on their behalf present the Fifty-third Report on '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 Standing Committee on Information Technology (2010-11) selected this subject for detailed examination and report to the Parliament. The examination of the subject could not be completed during the term of the Committee (2010-11). In view of the wide ramifications of the subject and considering the need for wider consultation, the Standing Committee on Information Technology (2011-12) reselected the subject for further examination. However, since the examination remained inconclusive during the term of the Committee (2011-12) and (2012-13), the present Committee again selected the subject to complete the unfinished task.

3. To elicit wide opinion on the subject, a Press Communiqué was issued through print and electronic media on 18th February, 2013 seeking views/suggestions from experts/stakeholders/organizations/public at large.

4. The Committee also took evidence of the experts, organizations, such as, Association of Unified Telecom Services Providers of India (AUSPI), Cellular Operators Association of India (COAI), Associated Chambers of Commerce and Industry (ASSOCHAM), Citizens Group of Mumbai and the nodal Department i.e. the Department of Telecommunications (Ministry of Communications and Information Technology).

5. The Committee at their sitting held on 10th February, 2014 considered and adopted the Report. The Committee wish to express their thanks to the representatives of the Department of Telecommunications (Ministry of Communications and Information Technology) who tendered their evidence before the Committee. The Committee also wish to express their sincere thanks to the State Governments/UT Administrations and organizations/individuals who furnished written information/views as well as those who appeared before the Committee and made available necessary information for consideration of the Committee, which was of great help to the Committee in arriving at conclusions.

6. The Committee also place on record their appreciation for the invaluable assistance rendered by the officials of Lok Sabha Secretariat attached to the Committee.

7. For facility of reference and convenience the observations/recommendations of the Committee have been printed in bold in Part-II of the Report.

New Delhi
10 February, 2014
21 Magha, 1935 (Saka)

RAO INDERJIT SINGH
Chairman,
Standing Committee on
Information Technology

REPORT
PART-I
NARRATION ANALYSIS

CHAPTER-I

Introduction

Telecommunications has evolved as a basic infrastructure like electricity, roads, water etc. and has also emerged as one of the critical components of economic growth required for overall socio economic development of the country. The Indian telecom sector has registered a phenomenal growth during the past few years and has become second largest telephone network in the world, only after China. A series of reform measures by the Government, for the development of the wireless technology and active participation by private sector has played an important role in the exponential growth of telecom sector in the country.

1.2 The Ministry of Communications and Information Technology (Department of Telecommunications) has informed the Committee that there is a strong two-way correlation between telecom development and overall economic development of a region. Telecom services are important drivers for development, delivery of public services such as education, health, etc. and integration of rural areas with the rest of the country. The National Telecom Policy, 2012 recognized the role of such services in furthering the national development agenda while enhancing equity and inclusiveness.

1.3 Highlighting the innumerable social and economic benefits of mobile telephony, in a memorandum submitted to the Committee, Resident Director, Regulatory Affairs and Government Relations, Vodafone India Limited (Shri T.V. Ramachandran) stated as under:-

“It is a well-established fact that telecom penetration has a multiplier effect on economic growth. In fact, a World Bank study has estimated that every 1% increase in tele-density results in a 3% increase in the rate of growth of Gross Domestic Product (GDP). The multiplier effect will be further enhanced with the increased proliferation of mobile broadband. In a recent (2009) study, the World Bank has estimated that in low and middle income countries every 10% increase in broadband penetration accelerates economic growth by 1.38%.”

1.4 While elaborating the impact of telecommunications in the context of the country, he further stated:-

“An India-specific study on the socio-economic impact of telecommunications by Indian Council for Research on International Economic Relations (ICRIER) in January 2009 concluded that there is significant positive correlation between increase in mobile penetration and growth in State Domestic Product (SDP) – with 10% increase in mobile penetration, SDP rises by 1.2% .”

1.5 With regard to teledensity, the Department informed the Committee that the Indian telecom network with 895.51 million telephone connections, including 864.72 million wireless telephone connections, at the end of December, 2012 is second largest network in the world after China. Out of this, 338.59 million telephone connections are in rural areas and 556.92 million are in urban areas of the country.

1.6 On the share of Private and Public Sector, the Department also stated that the share of private sector, in terms of numbers of subscribers, increased from 86.31 per cent to 86.64 per cent during the period from April to June 2012 and thereafter declined to 85.51 per cent by the end of December, 2012. On the other hand, share of public sector declined from 13.69 per cent to 13.36 per cent during the period April to June 2012 and then increased to 14.49 per cent by the end of December, 2012.

1.7 Elaborating on the roadmap for future expansion, the Department informed the Committee that the Government approved National Telecom Policy-2012 (NTP-2012) on 31st May 2012 which addresses the Vision, Strategic direction and the various medium term and long term issues related to telecom sector. The primary objective of NTP-2012 is maximizing public good by making available affordable, reliable and secure telecommunication and broadband services across the entire country. The main thrust of the Policy is on the multiplier effect and transformational impact of such services on the overall economy. It recognizes the role of such services in furthering the national development agenda while enhancing equity and inclusiveness. Availability of affordable and effective communications for the citizens is at the core of the vision and goal of the NTP-2012.

1.8 However, the advancements made in the field of telecommunications and its concomitant benefits had come with certain concerns. Elaborating on the issue, Director

General, Indian Council of Medical Research (Dr. R. S. Sharma), in his memorandum submitted to the Committee stated as under:-

“The explosive development of cell phone system in the country has greatly increased the extent and magnitude of RFR exposure. These new technologies have been introduced without full provision of information about their nature and without prior detailed discussion within the scientific community about possible consequences for health. Potential exposure also occurs in the vicinity of the fixed broadcast facilities often located in residential areas, schools etc. with no definite knowledge about harmful effects, if any, to occupants nearby.”

1.9 Enumerating further on the issue the State of Rajasthan (Shri Sudhir Kasliwal), in his memorandum submitted to the Committee stated as under:-

“There is no denying that mobile phones have become indispensable and are here to stay. They offer many conveniences and have been known to have saved human lives during accidents and natural disasters. At the same time medical studies conducted at various national and international levels by eminent doctors and scientists have also pointed to the sinister biological effects of radiation on human beings from mobile phones and towers, many of which are linked to changes in the electrical activity of the brain due to EMF Radiation. However, it is the duty of the Government to ensure that along with the manifold benefits of telecom revolution this technological boon should not be at the price of the invaluable human life.”

1.10 According to Citizen Groups of Mumbai (Ms. Juhi Chawla Mehta and Shri Prakash Munshi), fixing of antennae without regulations has caused a steep increase in health disorders in Mumbai which includes miscarriages, birth of deformed babies, cancer and leukemia. The health problems are growing exponentially similar to the exponential growth of mobile antennae- only a few years after the installation of antennae close to the citizen patients.

1.11 Director, Bombay National History Society (Dr. Asad A. Rahmani), informed the Committee that India is one of the fastest growing mobile telephony industries in the world. The growth in cell phone subscribers has also lead to growth of infrastructure in the form of mobile towers. Today, in the absence of any policy on infrastructure development and location of cell phone towers have been installed in the haphazard manner across urban and suburban habitats in India.

A. Need for a clear defined role for setting up of telecom towers

1.12 On the issue of setting up of mobile towers, it is seen that one of the objectives included in the National Telecom Policy (NTP) – 2012 is to address the ‘Right of Way (RoW)’ issues in setting up of telecom infrastructure. The Department in the Background Note submitted to the Committee informed that 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.”

1.13 The Committee were further informed that the Department of Telecommunications 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.

1.14 On the role of the Department with regard to the setting of mobile towers, it was stated in the Background Note that as per existing policy, Wireless Planning and Coordination Wing of Department of Telecommunications (DoT) issues siting 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. The siting clearance is issued without prejudice to applicable bylaws, rules and regulation of local bodies such as Municipal Corporation/ Gram Panchayat etc.

1.15 About the role of local bodies in granting licences, the position stated in Background Note is as under:-

“As per Section 10(c) of the Indian Telegraph Act, 1885, the telegraph authority shall not exercise powers to place telegraph line and posts in

respect of any property vested in or under the control or management of any local authority, without the permission of that authority. Therefore, for installation of tower and obtaining Right of Way (RoW), the telecom service providers have to obtain the permission from local authority.”

1.16 With regard to the role of Telecom Service Providers (TSPs), it is further stated in the Background Note that:-

“As per 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.”

1.17 Specifying the role of the Department and State/Local bodies in this regard, the Secretary, DoT during the course of evidence before the Committee submitted as under:-

“Sir, I would like to clarify. There are two distinct parts to this issue. One is, even if radiation is within the norms, whether the tower has been located with appropriate authority. That comes from the local bodies. So, even if, I am within the norms, I cannot go and install wherever I like unless I get the permission from a local body. That is one thing.

The second is even if I have got the authorisation from the local body, whether I am within the norms of the telecom regulations in terms of what is the level of radiation which is allowed, that, as has been explained, is measured both for the individual towers as well as the combined radiation from all the towers within that vicinity. These are two separate aspects for which the authorities are different. One is the physical aspect of simply setting up a tower whether it is permitted or not, and that location, that building etc. The other is the radiation. One part is controlled by the local body whether the tower has been given the permission or not by the local body. If the doubt is with regard to whether the radiation is within the norms that is the DoT’s job, not the local body’s job. But whether it has been allowed and authorised in that particular place, that is the local body’s job.”

1.18 On being asked by the Committee whether some norms/guidelines for setting up of towers have been formulated, the Department informed in a written reply that before installation of tower, the telecom service provider/infrastructure provider has to

obtain the necessary permission from the respective local bodies such as Municipal Corporation/Gram Panchayat Committee. Each State Government has formulated its own guidelines regarding grant of permission and levy of requisite fee for installation of mobile towers.

1.19 On the reasons for conflict between the local bodies and cell operators, the Department in written reply stated as under:-

“From the petitions filed by the telecom service providers in various Courts, it appears that the main causes of dispute with the State Government are levy of high fee (one time as well as annual recurring), restrictions on installation of towers and delay in grant of permission for installation of mobile towers. There is no separate authority appointed to resolve the disputes.”

1.20 Coming out strongly against the role of local bodies in the setting up of mobile towers, The Associated Chambers of Commerce and Industry of India (ASSOCHAM) in a memorandum submitted to the Committee stated as under:-

“...xxxx.... telecom is a central subject and all issues related to installation of mobile towers fall within the domain of the central authority of the Ministry of Communications and Information Technology and the Department of Telecommunications (DoT) as the concerned Department has already initiated the process for laying down uniform guidelines for installation of mobile towers.”

1.21 Echoing similar concern, Association of Unified Service Providers of India (AUSPI) and Cellular Operators Association of India (COAI) in a joint memorandum submitted to the Committee also stated that telecommunication is a central subject and Central Government is exclusively empowered to legislate thereon. Elaborating further on the issue, in the joint memorandum they had submitted as under:-

“The telecommunication towers and the equipment installed at the site forms part of the “telegraph” having been installed by the telecom operators in exercise of powers of the “telegraph authority” vested in it by the Central Government in exercise of powers under the provisions of Section 19B of the Indian Telegraph Act and it is completely beyond the jurisdiction of any State Authority to interfere in its functioning or operation in any manner, much less directing its removal.”

1.22 Stating that the unreasonable and impractical conditions including but not limited to designated places for installation of towers, imposition of exorbitant fees & taxes by state/local authorities are a big hurdle in achievement of roll out and quality

obligations, Tower and Infrastructure Providers Association (TAIPA) in their memorandum submitted to the Committee stated that some of the irrational provisions laid down by the local municipal authorities are as under:

- a) Exorbitant fees for giving permission to install towers,
- b) Property Tax which sometimes goes upto 110% of the ratable value,
- c) Permissions from Pollution Control boards,
- d) Permission from Fire Safety,
- e) Permission for Structural Safety,
- f) Coordination with multiple agencies for clearances,
- g) Provision of retrospective tax, etc and many more such conditions.

1.23 To provide services in every nook and corner of the country, TAIPA in their memorandum also suggested for the implementation of the following measures:-

- (i) Single Window clearance policy to be followed by all the states with standard set of copy of documents.
- (ii) Grid power for telecom towers to be accorded on priority and low tariffs
- (iii) Location of towers should be decided by Network topography. There should be no other condition like minimum distance from a building etc as telecom service providers adhere to stringent EMF norms.
- (iv) No artificial restriction on educational institutions and hospitals for tower installations
- (v) Any coercive actions like sealing or demolition of towers, disconnection of electricity could be done only in accordance with provisions of Indian Telegraph Act, 1885 and not on any other flimsy grounds
- (vi) Reasonable nominal administration fee and time bound approvals.

1.24 On the suggestions of the Committee to have public hearing before installing the towers, the Secretary of the Department, in a sitting of the Committee stated as under:-

“If the Committee advises, we will certainly ensure that it will be done.”

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

1.25 On the issue of guidelines framed by the Government for regulation of installation of mobile towers in the country, the Department in a detailed background note submitted as under:-

“A broad guideline for issue of clearance for installation of Mobile Towers was 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 guidelines were also placed on DoT website. The comments received thereon were examined and the said guidelines have further been reviewed. The revised guideline for grant of clearances for installation of mobile towers has been issued on 01.08.2013 and the same has also been placed on DoT website.

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, issues of Access Service Licence / Infrastructure Provider registration and SACFA clearance for frequency allocation at any location are dealt with 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.”

1.26 When the Committee enquired about the practice followed in advance countries like USA/UK in setting up of mobile towers particularly in the big and populous cities, the Department in its written reply stated:-

“The precise information is not available, however, the countries are using camouflaging techniques to maintain aesthetic look of sky-line.”

1.27 The Committee also sought the views of the State Governments/UT Administrations for formulating uniform national guidelines for setting up of telecom towers in the country. The following States/UT Administrations furnished their views as under:-

State/UT	Reply
Himachal Pradesh	It may be appropriate to have model guidelines at National level, but there are some issues which are required to be addressed only at state level for which state specific guidelines may be required.
Lakshwadweep	Yes
Manipur	The national Guideline should factor in geographical variations such as hilly terrains, plains, coastal areas, etc. In doing so, segmentation of areas with similar

	demographic terrain into identifiable clusters can be done. A uniform policy for each cluster can then be drafted.
Meghalaya	Yes, the State strongly feels that there should be uniform national guidelines for setting up of telecom towers in the Country. Telecom being a subject of the Union List under Seventh Schedule (Sr. 31) of the Constitution of India, the uniformity in national guidelines is required.
Rajasthan	Yes
Tripura	Yes
UT Administration of Daman and Diu	Yes

1.28 On the need to have uniform guidelines for telecom towers, Tower and Infrastructure Providers Association (TAIPA) in its memorandum submitted to the Committee stated as under:-

“As DoT has already issued guidelines on EMF & for height, design, structural safety, etc. and the same are being followed by operators and the tower companies, there is no need for state Governments/ municipal corporations, etc. to issue separate guidelines creating arbitrary restrictions on tower roll-out.”

1.29 Further elaborating on the need to have uniform guidelines for mobile tower installations, TAIPA in their memorandum further elaborated as under:-

“It will bring uniformity across the country enabling Telecom Service Providers (TSPs) and Infrastructure Provider (IP) Companies to plan and roll-out networks in an environment of greater certainty. It will also contribute to better control over network roll-out and at the same time enable timely completion of roll-out.

It will also help the Government administer the telecom sector in a more consistent and assured manner. There will be greater certainty on the applicable norms and guidelines and the overall administrative burden on the Government would reduce.

Although the bulk of the Towers in urban India are already installed, uniform norms will enable systematic planning in rural India and can be leveraged to introduce any positive innovations and incentives such as greater use of renewable energy sources through incentive schemes. Tax

holidays or lower rates of tax on rentals accruing from mobile towers to land/building owners may also be considered to encourage leasing of roof tops for installation of towers. State Governments could also incentivize tower installations through priority for grant of State Electricity Board connections for cell sites.”

1.30 Emphasizing the need for uniform guidelines, representative of the Department, during the course of oral evidence before the Committee stated as under:-

“..xx.. It has now been decided that a uniform guidelines have to be formulated at the national level to enforce restrictions on establishment or setting up of towers. This is one of the things that the Government has accepted and we will go ahead with this. We will go for national norms now.”

1.31 Vodafone India Limited also expressed the view that these Guidelines should be evolved into a National Infrastructure Policy and only items which lie within the purview of the States should be clearly identified for a State-specific policy.

1.32 On the issue of setting up of telecom tower, in his memorandum submitted to the Committee Retired Advisor (Technology), Department of Telecommunication (Shri Ram Kumar), stated that a Departmental Committee on BTS towers was constituted in March, 2012 under the Chairmanship of Advisor (Operations) and the said Committee had submitted its Report in June, 2012.

1.33 On the major recommendations made by the said Committee, the Department in a written reply stated the main recommendations were as under:-

- i. Need for Uniform guidelines for setting up of BTS Towers.
- ii. Need for Structural safety for towers on roof- tops.
- iii. Need for Identification of location for installation of mobile towers in Master Plan
- iv. Creation of In-building Solutions for future expansion of Mobile network.

1.34 When the Department was asked as to whether the framing of uniform guidelines applicable to all States across the country will be practical for a geographically diverse country like India, the Department in its written reply stated as under:-

“The guideline for grant of permission for installation of mobile towers is advisory in nature. At present, there is no proposal to give the guidelines any statutory status. However these guidelines have been revised effective from 01.08.2013 on the basis of feedback received after deliberations made with the state Government officials and various stake holders on 16.04.2013 and holding further consultations thereafter.”

1.35 On the reasons for making the guidelines merely advisory in nature, the Department stated as under:-

“Looking into the diverse geographical conditions and the fact that providing clearance for installation of tower is a State subject matter, the guidelines have been kept advisory in nature so that State Governments can incorporate additions/ modification to these guidelines suiting to their requirement wherever necessary. However, these guidelines have been sent to Chief Secretaries of all States and UTs for appropriate action.”

1.36 With regard to the steps taken by the Department for the implementation of the guidelines, the Department in their written reply stated that DoT has issued revised advisory guidelines to State Governments for issue of clearance for installation of mobile towers (effective from 01.08.2013) and the same has also been placed on the DoT website. The revised guidelines are provided at **Annexure**.

C. Structural Safety of Telecom Towers

1.37 In one of the memorandum received by the Committee, It was brought out to their notice that many of the towers have been erected in the country without ensuring safety of the building and even without taking any permission from the local bodies and such ‘illegal’ towers are a big threat to these building.

1.38 When the Committee enquired about the safeguards that have been put in place for towers erected on rooftops, the Department in its written reply stated that the issues related to structural safety are presently being taken care of by the Local Bodies/Municipal Corporation while granting permission for installation of mobile towers. The Committee also note that the Inter-Ministerial Committee set up by the Government had recommended for creation of an appropriate framework for structural safety clearance for towers set up on rooftops.

1.39 Further commenting on the issue, Retired Advisor (Technology), DoT, during the course of evidence before the Committee stated as under:-

“...xxxx...concern is regarding safety of building itself on which they are installed. Many a time the building strength is not checked properly on which these towers are installed which is dangerous. Many municipal corporations have taken action against these towers for having installed without permission and without checking strength of the buildings.”

1.40 He further added:-

“God forbid, if some earthquake comes somewhere, then I am sure the building on which the tower is there, that may be the first victim.”

1.41 The Secretary, DoT during evidence before the Committee admitted that safety aspect of telecom infrastructures like towers is an area of concern.

1.42 In this regard, when the Committee enquired about the details of the specifications regarding structural safety and design parameters for mobile towers issued by DoT, the Department in their written reply stated as under:-

“Telecom Engineering Centre (TEC) has developed 12 standards for telecom towers. These use the codes/specifications developed by BIS, for the quality of materials and foundation. These standards are not mandatory for the private telecom service providers at present. As far as the structural safety is concerned, it has been laid down by DoT in the guideline that the following certificates are to be submitted by all the TSPs:

Copy of structural stability certificate for ground based tower. In case of roof top BTS towers, structural stability certificate for the building and tower based on written approvals of any authorized Structural Engineer of state/local bodies/Central Building Research Institute (CBRI), Roorkee/ IIT/NIT or any other agency authorized by local body”.

1.43 When enquired about the reasons for not making the standards developed by Telecom Engineering Centre mandatory for the private telecom service providers, the Department replied as under:-

“The 12 Standards, developed by TEC for the mobile towers, are applicable to both private and public TSPs. The Department shall examine the issue of making the TEC standards for towers mandatory for all the TSPs.”

D. Sharing of Telecom Towers

1.44 The Department in their Background Note submitted to the Committee stated that to support the faster growth of telecom infrastructure including mobile tower, Department of Telecommunications has 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 towers, dark fibre, duct space etc. and provide the same to licensed telecom service providers.

1.45 On being enquired about the challenges, opportunities and problems which might arise because of tower sharing by different telecom service providers, the Department in its written reply informed as under:-

“There are not much problems arising due to sharing of mobile towers, however, in case of catastrophe or major failure at a particular shared site, the services of all the sharing service provides may become totally down and the area may be totally cut-off. The advantage of sharing is reduced capital expenditure and operating expenditure for service providers. Sharing of telecom tower amongst the telecom service providers is permitted subject to mutual agreement. Further, the towers established under the Universal Service Obligation Fund (USOF) scheme have been mandated to be capable of being shared among at least three telecom service provider.”

1.46 The Department also informed the Committee that as on date there are 404 numbers of IP-1 providers and to attract investment in this segment, 100 per cent FDI is already permitted for IP-1 providers.

1.47 Further, on the issue of making sharing of towers mandatory so as to avoid installation of more number of towers, the Department replied that generally, the towers installed by Infrastructure Providers are also shared by more than one operators. Therefore, even without mandate the passive infrastructures such as mobile towers are being shared amongst the operators.

1.48 On the steps being taken by the Department to encourage more and more sharing of towers, the Committee were informed that at present, the revenues earned by the Infrastructure Provider companies are not subjected to the annual license fee which is levied on the telecom service providers.

1.49 Emphasising on the need for a mandatory sharing of telecom towers, Centre for Electronics Design and Technology, Indian Institute of Science, Bangalore (Prof. H.S. Jamadagni) in his memorandum submitted to the Committee stated as under:-

“The towers set up for communication systems can be shared by several service providers. In view of efficient usage of towers and to reduce impact on the environment, it should be mandatory to share towers unless there are strong reasons otherwise”

1.50 Elaborating on the issue, TAIPA in their memorandum submitted to the Committee stated as under:-

“The telecom infrastructure providers, registered as Infrastructure Providers - Category I with the Department of Telecommunications have supported operators to build and maintain their own towers by promoting 'Sharing of Towers'. They now provide an Integrated Neutral Host Platform that is used by diverse and often competing operators. This brings cash benefits like savings in Opex and Capex. Besides, this has ensured efficient use of resources through cost-reduction, helping bring scale to telecom business, lowered consumer prices and improved quality of services etc., which has helped in building a unique, scalable and successful Indian business model for Telecom.”

CHAPTER-II

Issues relating to health hazards from EMF emission of Telecom towers and mobile handsets

A. Need to follow precautionary approach before finding conclusive proof

1.51 On the serious issue of apprehensions being expressed about the health hazards associated with the EMF radiation from the mobile towers, the Department in the Background Note submitted as under:-

“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) and none of these studies prove that the emissions from the mobile phone towers/networks are causing harmful effect on human beings. Further studies are going on around the world, since the effects on human beings are to be studied over a long period of time.

Further, a Committee, setup in 2006 under the Director General, Indian Council of Medical Research (IMR) to study the effects of radiations from mobile phone towers and related aspects, concluded that overall there is not enough evidence to show direct health hazards of Radio Frequency exposure from mobile Base Stations.

As per ICNIRP guidelines, adopted by Telecom Commission, epidemiological studies on exposed workers and the general public have shown no major health effects associated with typical exposure environments. The studies have yielded no convincing evidence that typical exposure levels lead to adverse reproductive outcomes or an increased cancer risk in exposed individuals. Report has provided the SAR reference levels for body exposure to microwave transmissions of particular frequency of transmitting antennae.”

1.52 The Department in the Background Note also provided the ICNIRP limits/levels of Base Station Emission as under:-

Frequency Range	E-Field Strength (Volt/Meter	H-Field Strength (Amp/Meter (A/m))	Power Density (Watt/Sq.Meter (W/Sq.m))
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		(V/m)		
400MHz	to	$1.375f^{1/2}$	$0.0037f^{1/2}$	$f/200$
2000MHz				
2GHz	to	61	0.16	10
300GHz				

(f = frequency in MHz)

1.53 The Department informed the Committee that in respect of BTS, norms for exposure limit for the Radio Frequency Field (Base Station Emissions) has been reduced to 1/10th of the existing limits prescribed by International Commission on Non Ionizing Radiation Protection (ICNIRP) with effect from 01.09.2012. In India, the cellular GSM services are being operated at 900 MHz, 1800 MHz and 2100 MHz frequency band. As per reduced radiation norms, for 900 MHz, Permissible Power Density is 0.45 Watt/Sqm, whereas for 1800 MHz and 2100 MHz, Permissible Power Density is 0.9 Watt/Sqm and 1.1 Watt/Sqm respectively.

1.54 When the Committee enquired about the year in which ICNIRP had issued these guidelines and their relevance in the present context, the Department in a written reply stated as under:-

“ICNIRP guidelines on EMF were issued in 1998. However, ICNIRP issued its Statement on EMF radiation in 2009, wherein, it has been stated that “it is the opinion of ICNIRP that the scientific literature published since the 1998 guidelines has provided no evidence of any adverse effects below the basic restrictions and does not necessitate an immediate revision of its guidance on limiting exposure to high frequency electromagnetic fields. Therefore, ICNIRP reconfirms the 1998 basic restrictions in the frequency range 100 kHz–300 GHz until further notice”.

1.55 On the number of studies which have pointed out inadequacies of ICNIRP guidelines, the Department in its written reply stated as under:-

“Some studies, including the Bioinitiative Report, have given recommendations which are stringent compared to ICNIRP guidelines. However, WHO is examining all the studies and changes, if any, suggested in the radiation limit by WHO shall be considered appropriately.”

1.56 The Department has cited that WHO in its Fact Sheet No. 304, of May, 2006 on Electromagnetic Fields and Public Health (Base Stations and Wireless Technologies) had 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.”

1.57 The Department also informed the Committee that:-

“Based on media reports and public concerns an Inter-Ministerial Committee (IMC) consisting of officers from DoT, Indian Council of Medical Research (Ministry of health), Department of Biotechnology and Ministry of Environment and forest was constituted on 24 August, 2010 to examine the effect of EMF Radiation from Base Stations and mobile phones.

Inter-Ministerial Committee (IMC) in its report, examined the environmental and health related concerns and indicated that most of the laboratory studies were unable to find a direct link between exposure to radio frequency radiation and health; and the scientific studies as yet have not been able to confirm a cause and effect relationship between radio frequency radiation and health. The effect of emission from cell phone towers is not known yet with certainty. It is to submit that the Inter-Ministerial Committee (IMC) has examined 90 international and national studies/reference papers, related with the EMF radiation, before finalizing the report.”

1.58 However, various experts/stakeholders who submitted their memoranda to the Committee or appeared before the Committee expressed serious concerns about the harmful effects of EMF emission from telecom towers and mobile handsets both on human beings and flora and fauna. In this regard, Bombay Natural History Society, in his memorandum submitted as under:-

“Microwave and radiofrequency pollution appears to constitute a potential cause for the decline of animal populations and deterioration of health of plants and humans living near radiation sources such as phone masts. Studies have indicated the significant non-thermal long-term impacts of EMFs on species, especially at genetic level which can lead to various health complications including brain tumors, reduction in sperm counts and sperm mobility, congenital deformities, psychiatric problems and endocrine disruptions. However, similar aspects are yet to be studied among animal populations.”

1.59 He further stated:-

“More and more scientific data is coming in linking the effects of mobile radiation to the ill-effects on the wildlife like birds, bats, honeybees and even humans.”

1.60 Further elaborating on the issue, School of Environmental Science, Jawaharlal Nehru University (Prof. Jitendra Behari), in his memorandum stated:-

“Several adverse health effects have been linked to the exposure to electromagnetic fields from mobile phones, it is even more important in the case of children and adolescents since not only their body is under development, but also because their cumulative exposure is higher than for adults.”

1.61 Commenting on the issue, Indian Council of Medical Research (Dr. R. S. Sharma) in their memorandum submitted:-

“There are two distinct possibilities by which the RFR exposure may cause biological effects. There are thermal effects caused by holding mobile phones close to the body. Secondly, there could be possible non-thermal effects from both phones and base stations.

Effect on cell growth, cell differentiation, DNA damage, altered immune system, hormonal effects, reproduction (decrease in sperm counts, sperm motility, decrease in testicular size and histopathology) neurological (brain development, neurotransmission, behavior), cardiovascular (blood pressure and ECG changes) systems etc have been reported.

Association between exposure to these waves and different types of cancers (blood cancer, brain cancer, breast cancer, testicular cancer) have also been reported in Army/ Naval personnel working in radio-communication or other long term users.”

1.62 However, emphasizing on the need to review the guidelines adopted by ICNIRP, Retired Advisor (Technology), DoT during the course of evidence before the Committee stated as under:-

“..xx..As you know the International Commission on Non-Ionizing Radiation Protection (ICNIRP) is the agency which fixes the norms. They fixed the norms long ago, not now..xx..”

1.63 Further commenting on the health hazards of EMF emission from telecom towers, Retired Advisor (Technology), DoT during the course of evidence before the Committee stated as under:-

“Various studies have been made by many agencies including WHO and they have concluded that it is possible carcinogenic for human. A recent study has been released by Bioinitiative Report on 2012 in which 29 scientist from ten countries participatedxxxx.....They made some 1800 studies over a period of time and they have concluded that the existing public safety limits are not adequate.”

1.64 Elaborating on the health hazards of non-ionized EMF radiations, Retired Advisor (Technology), DoT, in his memorandum submitted:-

“The various dangerous effects of mobile tower radiations on health of human beings are concluded to be as follows:

- * Pervasive impairment of metabolic and reproductive systems.
- * Effect on fertility, reproduction and health of Off-springs.
- * Damage to human sperms.
- * Risk of glioma (a malignant brain tumour) and acoustic neuroma (a slow growing tumour of the nerve connecting ear and brain).
- * Headaches, disturbed concentration and behavioral problems.
- * Sleep disorders, confusion, anxiety and depression and appetite disturbances.
- * Prevent body from healing the damaged DNA.
- * Immune system imbalances and metabolic disruptions.
- * Low resistance to diseases.
- * Effect on blood brain barriers that stops the flow of toxins into the sensitive brain tissues.”

1.65 Citizens of the State of Rajasthan, in their memorandum stated as under:-

“Some of the reported biological effects as per research conducted worldwide are Sleep Disorders, Dizziness, Headaches, Loss in Memory, Depression, Fatigue, Palpitation of the Heart and other Heart Ailments, Visual Disorders, Cardiovascular problems, Altered Reflexes, Neuro-degenerative disorders - Alzheimer, Parkinson, Immune system Degradation, Tinnitus and Ear damage - Tumours in Ears, Irreversible Infertility, Effect on skin, DNA Damage, Increase in Cancer risk, Deformed Babies being born and Miscarriages.”

1.66 Citizen Groups of Mumbai (Ms. Juhi Chawla Mehta and Shri Prakash Munshi), in their memorandum while also expressing similar concerns, submitted as under:-

“The exponential increase in incidence of Health hazards – especially Cancer Leukemia and other initial ailments before reaching the terminal sicknesses should be enough proof to any layman of the link between

health hazards from EMF radiation from mobile tower antennae. Especially citizens who suffer due to living in the main beam of the radiation from the antennae, without any family history. The citizens do not want to wait for another 10 to 20 years like the Cancer and Carcinogenic revelations of the Cigarette, Asbestos and Dyestuffs industries.”

1.67 Elaborating on the increasing concern of the public on the issue, a representative of Citizen Groups of Mumbai, during the course of the evidence as under:-

“..xx..I simply want to emphasise on the points of view of the residents. Every week we are invited by various citizen groups, schools, colleges, Lion Club, Rotary Club, etc. to give a presentation on the ill effects of the EMF radiation. This is now a burning issue literally. It is in everyone’s mind. This is something which you cannot control and this is something you cannot see. Yet, it will have its effect on you. If you are lucky, you will escape with less effects and if you are unlucky, you will have to face the ill effects. People are getting restless and I will be frank with what they perceive as inaction by the relevant authorities. The relevant authorities are Central Government, DoT, the State Government and the local bodies..xx.”

1.68 They also submitted:-

“There are various health hazards faced by citizens all over the world due to electro Magnetic Field (EMF) Radiation. EMF radiation is there from mobile phones, mobile tower antennae, microwave ovens, cordless landlines, televisions, laptops, computers and the like.
..xx..The health problems begin with headaches, sleep disturbance and tingling in the head, memory loss, fatigue, miscarriage, birth of deformed babies, heart problems and later cancer, leukemia.”

1.69 Presenting a diametrically opposite view on the issue, representatives of AUSPI and COAI in their joint memorandum to the Committee stated as under:-

“We would like to bring to your notice that in 2008, India had adopted International Commission on Non-Ionizing Radiation Protection (ICNIRP) standards which are the international safety guidelines for RF exposure. These are based on a thorough and ongoing review of all relevant scientific studies and represent world’s best practice.

In India, the current EMF exposure levels from mobile communication systems have a substantial safety margin as prescribed by the Department

of Telecommunication (DoT). It is internationally acknowledged, globally accepted and widely endorsed that the ICNIRP limits already incorporate a margin of 50 times (below) in the levels recommended for general public exposure. In addition, the DoT has, with effect from 1 September 2012 further reduced the EMF exposure limits to 1/10 of ICNIRP. Thus, the current EMF exposure levels from mobile communication systems in the country already include more than a substantial safety margin. Also it is submitted that we are in full conformity/compliance with the EMF levels required to ensure health and safety.”

1.70 It has further been submitted in the memorandum that:-

“It is most important to note that the RF radiations emitted by Mobile Communication Systems lie in the non-ionizing part of the electromagnetic spectrum and thus do not have enough energy to break the bonds that hold molecules in the cells together. Thus, the exposure to EMF Radiations emitted from Mobile Systems cannot produce ionization or cause any genetic damage.

Also, the RF emissions from mobile base stations are some 50,000 times lower than the levels at which the first health effects begin to be established. The output power of mobile phones is less than 1 Watt (typically is in the range of 0.2 to 0.6 watts), which is far lower than the emission levels that emanating from the microwave or even the radio.”

1.71 Further justifying their contention, they stated:-

“Some of the other agencies who operate in the band 30MHz- 3GHz i.e. Non- Ionizing band are as below:

Other sources of EMF	Emitted Powers
Door Darshan (UHF) – TV	10,000-20,000 W
Akashvani (VHF) Radio/FM	10,000-20,000 W
Microwave oven	1000 W
Police Wireless	20-50 W
Mobile Systems	10-20 W
Mobile Phone	2W

There are thousands of maintenance officials working in above departments for eight hours a day and reside in colonies hosting these sources of UHF/VHF since last thirty years. However, there is no evidence of any higher incidence of brain cancer or any other specific health problems in these departments. High power electric transmission lines, electric motors, railway engine and lines, spark plugs of vehicles, TV

remotes, Computers and kitchens all emit μ UHF power. Moreover, the radiations from the BTSs and mobiles are regulated as per guidelines specified by the DoT.”

1.72 On this issue, Reliance Communications Limited in its memorandum submitted to the Committee stated as under:-

“Electromagnetic Field (EMF) is part of everyday life, emitted both by natural sources like the sun, the Earth and the ionosphere. In the electromagnetic spectrum some rays like gamma rays, cosmic rays and X-rays give off radioactive material called ionizing radiation’. However, EMF radiations emitted by Mobile Communication systems lie in the non-ionizing part of the electromagnetic spectrum and does not produce ionization or cause any genetic damage.

The output power of mobile phones is less than 1 Watt (typically is in the range of 0.2 to 0.6 watts), which is far lower than the emission levels that are emanating from the microwave or even the radio.”

1.73 On this issue, Chairman, Telecom Sector Committee, European Business Group, India (Shri J.P. Garg) in his memorandum, *inter-alia*, s submitted as under:-

“The ICNIRP standards incorporate substantial safety margins (50 times reduction factor), enough to provide protection from established health hazards / potential risks from EMF exposure for all members of the community based on scientific evidence / studies research. The safety factor includes consideration of

- effects of EMF exposure under severe environmental conditions (high temperature etc) and / or high activity levels.
- the potentially higher thermal sensitivity in certain population groups, such as the frail and / or elderly, infants and young children and people with diseases or taking medication that compromise thermal tolerance.

1.74 In the same memorandum, EBG has also submitted as under:-

“India should reconsider the 2012 decision of lowering the exposure limits and should revert back to the implementation of the international / ICNIRP guidelines on EMF exposure, which was the policy decision of Telecom Commission of India in 2008.

These ICNIRP standards have been endorsed by the World Health Organisation (WHO) and recommended to be adopted as national standard by the countries. Most countries of the world have adopted these standards.”

1.75 Reacting to the Inter-Ministerial Committee Report, ASSOCHAM in their memorandum submitted to the Committee stated as under:-

“ASSOCHAM earnestly believes that the reduction in the EMF limits made in India in September, 2012 to assuage public concerns should be an interim arrangement pending completion of the study by ICMR and the WHO review and that in the long run EMF safety standards should be based on scientific and medical evidence and should be harmonized.”

1.76 When the Committee enquired about the total number of research and study done in India by various experts/universities and their findings, the Department in written reply stated:-

“ (i) Indian Council of Medical Research (ICMR) supported an animal study (2005-08) entitled “Microwave radiations effects on reproductive systems of male rats” under Prof. J. Behari, School of Environmental Sciences, Jawaharlal Nehru University, New Delhi. Ante oxidative changes were noticed in reproductive pattern of male rates and increase in the level of CAT activity. The result obtained showed that the chronic exposure to these radiations cause double strand DNA breaks in sperm cells. This study also shows that the microwave radiation exposure can cause statistically significant decrease in the sperm count and testes weight.

(ii) To study the adverse effects of cell phone the ICMR has just initiated (June, 2010) a study in Delhi to examine whether use of cell phone create risk of neurological disorders and reproductive dysfunctions. Measurement of specific absorption rate (SAR) from various types of cell phones and power density, wave length and frequency of RFR emitted from cell phone towers is also under study. These physical characteristics of RFR will be correlated with the clinical & laboratory findings.

(iii) Studies conducted in Guru Nanak Dev University, Amritsar has found correlation between mobile phone use (exposure to radio frequency radiations) and DNA and chromosomal damage in lymphocytes of individuals using mobile phones which may have long-term consequences in terms of neoplasia and/or age-related changes (Gandhi & Anita, 2007)⁸⁰. Exposure to radiofrequency radiations has been reported to

affect physiological, neurological, cognitive and behavioral changes. (Gandhi et al. 2005)75.

(iv) PGIMER, Chandigarh, has conducted a study (Panda et al., 2010) 89 and recommended following criteria's for the release of harmful rays from mobile phones.

- Mobile phones should not be used continuously for more than one hour in a day.
- Hands free technology to be used where excessive use of the mobile phone is unavoidable. This includes use of microphones and Bluetooth so that the handset remains away from the ear and thus avoids the direct impact of harmful electromagnetic radiations on the ear and the brain.
- People to avoid long talks and discussions on mobile phones as far as possible.

1.77 On the considerations given to the findings of the research carried out in India, the Department has stated that the IMC, in its reports, has examined the researches undertaken in India and its findings.

1.78 Elaborating on the complexity of the issue, Secretary, DoT, during evidence before the Committee stated as under:-

“Sir, this subject is actually a very complex subject because there are a number of players. There are international organizations which are working on setting the norms for radiation. There are organizations like WHO which are trying to understand the impact on the health by the radiation. Then, there is of course the Government of India which is kind of taking care of the technical parameters. Then, there are State Governments and the local bodies, and there is also a lot of interest and activism from various NGOs in this field. The spectrum is actually very vast, the stakeholders who are involved.

The other complexity is that science in this field is still not deterministic. It is broadly probabilistic and even in that respect WHO has not found any conclusive evidence to establish that the radiations from the towers have any harmful effect on the health.

However, we need to see what the public perception is and we need to address that as well. So, it was keeping this in mind that -- despite the fact that the International Commission on Non-Ionising Radiation Protection (ICNRP), which had already worked out some norms -- after consultation

with the Inter-Ministerial Committee, we worked out a set of norms which is ten times more stringent.”

B. Restrictions on setting up of telecom towers in residential areas

1.79 From some of the memoranda received by the Committee during the examination of the subject, the Committee noted that various individuals and housing societies have complained about the setting up of mobile towers in residential areas. Some of them had requested for removal of entire telecom towers from the residential areas irrespective of their sites in urban or rural areas and the same be installed at a suitable specified distance from the residential areas.

1.80 Making a plea for the removal of mobile towers from the residential areas, Citizens of the State of Rajasthan, in their memorandum submitted to the Committee stated that the towers may be re-located to vacant Government land away from residential areas, schools and hospitals. The Government/Municipalities can also collect considerable amount of revenue from the services providers.

1.81 Further elaborating on the issue, Citizens of the State of Rajasthan stated as under:-

“ As there have been cases in Jaipur and Mumbai (as revealed by the media reports and personal observations) those buildings/ flats/ inhabitations directly exposed to the Tower/ or have maximum exposure have reported more cases of cancer/ other related illness due to ill effects of radiation. Whether it's a case of Usha Kiran building of Mumbai or residence in Pradhan Marg at Malviya Nagar, Jaipur experts have studied and also residents have revealed that the flats which are not directly exposed to the radiation tower have no reported case of illness while rest have definite cases of diseases which indicate cause and effect relationship. Hence, No transmitter on a tower should face houses which are within 100 mts. of the towers.

This is possible only when the height of the tower is in accordance with the recommendation of the Ministry of Environment and Forest, Govt. of India. An affidavit in this regard must also be taken from the Tower companies.”

1.82 Hon. Secretary, Roshni Co-operative Housing society Limited, Mumbai (Mrs. Jyoti Kotwani), in a memorandum submitted to the Committee stated that local municipal of Bandra (West) H ward authorities grant permissions to Mobile Provider Service

Companies to install their cell towers on the buildings having five to seven floors which are surrounded by high rise buildings having twelve and more floors.

1.83 Raising similar concern, President, Defence Colony Welfare Association, New Delhi (Shri R. Ganesh Aiyar) in his memorandum submitted to the Committee submitted that in Defence Colony, New Delhi, residents and individuals are most concerned and worried as a community about the health and the risks to their families, particularly the very young and the aged, from continuous exposure to cell phone tower electro-magnetic radiation in densely populated residential areas. There are people who live next to towers in the colony suffering from brain tumours, cancer, headaches, nausea amongst other problems. Typically, the cell phone tower representatives go knocking door to door and offer a handsome monthly rental to the property owner for allowing the tower on their roof and proceed to erect towers without any civic bodies or RAW approval. The towers are erected in residential colonies on 1st and 2nd floors beaming directly into people's homes, schools etc. some as close as 10 meters with no consideration to the neighbours, children or the community as a whole.

1.84 A resident of Chembur, Sindhi Society (Ms. Karina Kaur), has highlighted the serious health problem faced by the residents of their building which has the height of 8 floors as around 30-35 antennas are installed at the adjacent building which has 6 floors. The agreement of the mobile towers in the adjacent building had already expired on 31.03.2012. Due to these towers, they are facing serious health problems, such as, continuous headaches, vomiting, rashes on skin, etc. It was also requested that strict provisions should be made so as to punish the owners of the mobile towers and the members of the building who are allowing setting up of towers on their terraces.

1.85 On this issue, the Department while furnishing their comments informed the Committee that the complaints in this regard had been forwarded to TERM Cell, Mumbai, for appropriate action.

1.86 From the above, sensing the serious concern of various individuals/residents of Housing Society, the Committee enquired about framing of separate rules for setting up of mobile towers in residential area. To this the Department in its written reply stated as under:-

“There is no bar on setting up of the mobile towers in residential areas. However, as per the guideline dated 01.08.2013, there shall be no building

right in front of the antenna(e), of equivalent height taking into account the tilt of the lowest antenna on tower as per details in the guideline.”

1.87 On making the consent of the resident mandatory before installing mobile towers in residential areas, the Department replied as under:-

“As per the advisory guideline dated 01.08.2013, the local bodies may seek submission of the copy of No Objection Certificate (NOC) from Building Owner / entities having roof top rights or roof top tenants in case of roof based tower/ land owner in case of ground based tower, as the case may be. As per their rules in force, State Governments, at their discretion, may seek fresh NOC at the time of renewal of site (tenancy) contract for mobile tower.”

1.88 The Committee were also informed by the Department that while framing guidelines for setting up of towers in residential areas, following measures have been taken into consideration:-

“As per the revised guidelines dated 01.08.2013, it is envisaged that in case of both ground based towers & roof top towers, there shall be no building right in front of the antenna(e), of equivalent height taking into account the tilt of the lowest antenna on tower as per details in the table below:

Number of antenna(e) pointed in the same direction	Building/Structure safe distance from the antenna(e) at the same height (in meters)
1	20
2	35
4	45
6	55

1.89 Justifying the reasons for setting up of mobile towers in residential areas, the Department replied as under:-

“The Department has to ensure expansion of telecom services, with good quality of service, while ensuring safety of the public. Installation of towers in the residential areas may create concerns among the members of public. Accordingly, it has been stated in the DoT guideline that “State Governments along with DoT may organize public awareness programs involving civil society members”.

C. Restrictions for setting up towers in schools, colleges and hospitals

1.90 The Committee received suggestions from various individuals/organizations that telecom towers should not be allowed to be installed in public places like schools, hospitals, colleges and other public places. Citizen Groups of Mumbai submitted to the Committee that installation of mobile tower antennae on side walls, terraces of hospitals, nursing homes, educational institutions, old people homes, Government buildings and heritage buildings should be banned and there should be restrictions of mobile tower antennas at a distance of 100 meters from such buildings. Similarly, in a memorandum submitted to the Committee, Mobile Tower Grievance Forum (Shri Milind Bembalkar and Shri Rajendra Ranjan), proposed that towers should not be allowed on schools, colleges and hospitals, children correction homes (*Balsudhargriha*), *Vrudhashram* and hotels/orphanage buildings for children.

1.91 Similarly, Citizens of the State of Rajasthan, in their memorandum submitted to the Committee stated as under:

“There should be a ban on installation of BTS and Antennae on Schools and Hospitals, Playgrounds for children, (on) along the Walls of Buildings and strictly prohibited for residential areas. Studies have specifically pointed out that the health hazards emitting from the towers for Children are multifold putting them in the highly vulnerable group.”

1.92 With regard to restriction of setting up towers in public places, such as, schools, hospitals and other such public places, the Department stated that as per the broad guidelines issued by DoT regarding installation of mobile towers, no restrictions has been imposed in installation of tower on specific building such as schools/hospitals.

1.93 When the Committee enquired about the recommendation made by Inter-Ministerial Committee in this regard, the Department stated as under:-

“IMC, in its report, had made recommendation to impose restrictions on installations of mobile towers within the premises of Schools and hospitals etc. This recommendation was not accepted considering that banning/restriction of installation of towers in schools / hospitals or at any other location in fact may give rise to a perception that despite the tightening of the norms, the radiations are harmful and this may lead to public resistance against installation of towers denying them the quality mobile services due to unfounded reasons which are not based on a scientific study or facts.”

1.94 On the reasons/findings on the basis of which IMC has made the recommendation, the Department in a written reply stated as under:-

“The Inter-ministerial Committee recommended to consider imposing restrictions on installation of BTS towers within the compound of schools and hospitals, based on issues raised by Stakeholders. However, no conclusive evidence has been established so far by any national / international organization regarding adverse effect of EMF radiation on human health.”

1.95 With regard to the number of States which had imposed restriction on the setting up of towers in such places and the number of Court Orders filed in this regard, the Department informed the Committee as under:-

“State Government of Rajasthan, in its guidelines for grant of permission for installation of tower, has stipulated that the mobile towers should not be installed in school/colleges buildings. High court of Rajasthan at Jaipur, in a PIL, has ordered the State Government of Rajasthan to implement its guidelines and submit compliance. However, the said order has been challenged by the telecom service providers in Hon’ble Supreme Court and the matter is sub-judice.

Further, as per the available information, Madhya Pradesh Government has also issued a Gazette Notification which excludes school and hospital buildings/ premises from the list of places permissible for erecting telecom towers.”

1.96 Elaborating further on international practices followed in this regard, the Department submitted:-

“As per WHO and ICNIRP guidelines, there are no such restrictions. Further, no information is available about such specific countries that impose such restrictions.”

1.97 On the above issue, Chairman, Telecom Selector Committee, European Business Group India, in his memorandum submitted to the Committee stated as under:-

“There are a few countries like Switzerland, who are observing ICNIRP based limits as the national standard and for precautionary approach, lower limits for areas like apartments, schools, hospitals, workplace and children playgrounds.”

1.98 Reacting strongly against any such proposal for putting restriction for setting up of telecom towers in schools, hospitals, colleges, etc., Director General, TAIPA, in their memorandum submitted to the Committee suggested that there should not be any artificial restrictions on educational institutions and hospitals for tower installations.

D. Need for undertaking Long Term Research

1.99 Various individuals/experts/stakeholders who submitted their memoranda to the Committee or appeared before the Committee emphasized upon the need for a long term research and conducting long term impact assessment studies to monitor the impact of EMR on biological environmental. Director, Bombay Natural History Society, in his memorandum submitted as under:

“Pollution from EMRs being a relatively new environmental issue, there is a lack of established standard procedures and protocols to study and monitor the EMF impacts especially among wildlife, which often make the comparative evaluations between studies difficult. Moreover, there are no long-term data available on the environmental impacts of EMRs as of now. Well designed long-term impact assessment studies would be required to monitor the impact of ever-increasing intensities of EMRs on our biological environment.”

1.100 Commenting on the inadequacies of the present research and the difficulties in understanding the biological effects of RFR, Scientist-F, Indian Council of Medical Research, in their memorandum submitted to the Committee stated as under:-

“The main difficulty in understanding the biological effects of RFR is caused by the complex interaction of the different exposure parameters as well as the mass, shape and size of the body, the orientation of the body with the field vectors and the electrical properties of both the body and the environment. Other variables which may play a role in possible biological effects are those that are part of environment i.e. ambient temperature, air velocity, humidity and body insulation. Characteristics of the individual i.e. age, gender, activity level, debilitation and/or other diseases would also contribute. As all these factors have not been studied in a comprehensive manner, hence no conclusions can be drawn.”

1.101 Also suggesting the need for undertaking long term research in biological effect of radiations from telecom tower radiations, the Ministry of Science and Technology (Department of Biotechnology) also furnished their comment as under:-

“Though there is no decisive scientific evidence that RF signals from telecom towers and wireless network causes adverse health effect, however, based on the literature survey number of studies have reported the link between exposures to radio frequency radiations on the occurrence of health disorders such as damage to cell, tissue and DNA, depression, suppressed immune function, tumors etc. The elderly people, pregnant women and children’s are at greatest risk due to their thinner skulls, and rapid rate of growth. Therefore, in view of the growing scientific evidence citing biological effect of radiations from telecom tower radiations it is essential that studies on the long term and cumulative exposure of electromagnetic radiations and other agents are conducted.”

1.102 During the study visit of the Committee to Mumbai and Goa from 24-28 January, 2013, the Department informed the Committee that the main challenge in conducting studies of radiation hazard is the requirement of very long period of scientific research on targetted population.

1.103 On being enquired about the measures taken by DoT for continuous or long term research, the Department replied:-

“On the directive of Prime Minister’s Office (PMO), Department of Science & Technology (DST) has constituted a Committee on 01.10.2012, under the Chairmanship of Dr. N.K. Ganguly, Former Director General (ICMR), having representative from IIT Chennai, Indian Institute of Toxicology Research, Lucknow, Department of Telecom, Ministry of Environment & Forest, ICMR and DST to examine the harmful effects from Cell 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. “

1.104 On the issue of funding such research programme, Scientific Officer ‘G’, Bhabha Atomic Research Center (Dr. R.K. Bajpai), in his memorandum submitted to the Committee stated as under:-

“A nominal charge may be included on operators to promote research on impact assessment and generate long term data. The reported harmful effects need to be substantiated through scientific data bases. For examples decline of house sparrow as a result of mobile tower radiation can be substantiated if baseline data on sparrow populations prior to installation of tower and a monitoring for their population afterward can bring out better correlation.”

1.105 On the issue of budgetary grant allocated by the Department for studying the health hazards from radiation emanating from the telecom towers and mobile handsets, the Department in a written reply informed the Committee that no budgetary grant has been allotted for this purpose.

1.106 On being pointed out by the Committee that radiation being an area of concern needs constant research and need a regular budgetary allocation under separate head, the Department stated:-

“In India, studies on health hazards from EMF radiation are being conducted by Department of Science & Technology as well as by ICMR under Ministry of Health. There is an understanding with DST that such research shall be jointly funded by DoT and DST.”

1.107 On the plans of the Department to allocate separate budgetary grant, the Department informed the Committee that the request for budgetary allocation for fund shall be processed as and when it is received from DST.

1.108 On the issue of creating, a separate budgetary head, the Department informed the Committee that action has been initiated for opening a separate budget head of expenditure for studies on health hazard from EMF radiation.

1.109 Further, on the issue of imposing nominal charge on telecom operators to promote or undertake research and generate long term data, the Department in a written reply also stated as under:-

“So far, DoT has no proposal to charge Telecom operators to promote or undertake research and generate long term data. However, as replied above, Department of Science & Technology has undertaken such scientific researches/studies for assessment of possible health hazards due to EMR from mobile towers/handsets.”

1.110 Emphasizing the need for India specific research, Citizen Groups of Mumbai, in their memorandum submitted to the Committee *inter-alia* stated as under:-

“.....For example a Senior Academician Dr. Vijayalaxmi, in the Department of Radiation Oncology, University of Texas Health Science Centre, Texas USA one of the persons on whose research World Health organization and

FCC rely on, informed that her research is based on One Antenna, Two Watts Power Transmission and one Mouse.

She was not aware of clusters of antenna and the kind of power transmission by antennae in Mumbai or other cities in India. She was shown a cluster of antennae at Haji Ali Juice Center and told to do research based on clusters and power transmission of levels from 400 watts to 800 watts. Just because we have more than a billion people Indian lives are not cheap and we should not be taken for granted.”

1.111 When the Committee enquired about the details of the studies which have been relied upon by WHO, the Department in their written reply stated as under:-

“WHO has relied upon the international scientific studies and research on EMF radiation. WHO, through the International EMF Project, has established a programme to monitor the EMF scientific literature, to evaluate the health effects from exposure to EMF in the range from 0 to 300 GHz, to provide advice about possible EMF hazards and to identify suitable mitigation measures. Following extensive international reviews, the International EMF Project has promoted research to fill gaps in knowledge. In response national Governments and research institutes have funded over \$250 million on EMF research over the past 10 years.”

1.112 When enquired about the need for India specific research on the issue, the Department stated in a written reply as under:-

“The effects of EMF radiation on the human health, if any, shall not be drastically different across the world. The conditions specific to India have been conveyed to WHO for their consideration.”

1.113 On the measures taken by the Department to promote India specific research on health hazards of EMF radiations from telecom towers and mobile handsets, the Department stated that Department of Science & Technology (DST) has constituted a Committee on 01.10.2012, under the Chairmanship of Dr. N.K. Ganguly, Former Director General (ICMR) to examine the harmful effects of radiation from Cell Towers on the population living in the vicinity.

1.114 The Committee have also been informed that based on the recommendation of the Committee constituted on 01.10.2012 under the Chairmanship of Dr. N.K. Ganguly, 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/Organisations-public or private, individually or in collaboration. Now SERB under Department of Science and Technology (Government of India) has constituted an Expert Committee/Task Force vide their letter No.:SER/CELL TOWER/2012 dated 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.

1.115 On the query of the Committee on the study done to ascertain the different existing conditions between advanced and developed countries like USA/UK and developing country like India, the Department in a written reply stated as under:-

“IMC constituted by DoT had examined about 90 national and international research / studies and after due deliberation with stakeholders has submitted its report in year 2011, based on which department has adopted radiation limits which are 1/10th of ICNIRP recommended limits.”

1.116 With regard to India specific conditions that have been conveyed to WHO for their consideration, the Department informed the Committee that:-

“Specific conditions that have been conveyed include multi-operator scenario, mobile phone usage, higher population density etc.”

1.117 Bringing out some of the different conditions prevailing in the developed countries vis-a-vis India, Citizen of the State of Rajasthan, in their memorandum submitted to the Committee stated as under:

“Currently, all the standards of radiation limit cater to the western world and are based on research conducted in western countries where conditions are very different from those in India –

- In USA and Europe, population density is very low as compared to that in India.
- Climate in the countries is cold.
- Density of mobile phone towers is very low as compared to India.
- The body mass of the people in these countries is higher than Indian people

So, unless proper research is done specifically for Indian conditions - it is better to act on the side of caution.”

E. International Practices and countries having lower emission standards

1.118 When the Committee enquired about the countries having lower emission standard than India, the Department informed as under:-

“Some of countries having lower radiation emission norms than India are as below:-

Country	Frequency	Power Density
Bulgaria	900, 1800 & 2100 MHz	0.1 Watt/Sqm
Italy	900, 1800 & 2100 MHz	0.1 Watt/Sqm
Lithuania	900, 1800 & 2100 MHz	0.1 Watt/Sqm
Poland	900, 1800 & 2100 MHz	0.1 Watt/Sqm
Russia	900, 1800 & 2100 MHz	0.1 Watt/Sqm

However, in India, the limiting reference levels of Electromagnetic radiation from Mobile towers has been reduced to 1/10th of the limit prescribed by the ICNIRP with effect from 01.09.2012 which is as below:-

Frequency (MHz)	ICNIRP Radiation Norms	Revised DoT Norms effective from 01.09.2012
900	4.5 Watt/Sqm	0.45 Watt/Sqm
1800	9 Watt/Sqm	0.9 Watt/Sqm
2100	10.5 Watt/Sqm	1.05 Watt/Sqm

With above revision, India has become one of the very few countries in the world who have stringent EMF Radiation Standards not only for mobile towers but also for mobile handsets.”

1.119 Chairman, Telecom Sector Committee, European Business Group, India, in his memorandum submitted to the Committee stated as under:-

“Few countries are observing limits below ICNIRP and FCC regulations (i.e. more stringent levels), perhaps on the basis of precautionary principle like, - Belarus, Bulgaria, Chile, China, Israel, Lithuania, Poland, Russia, Belgium, Greece, Italy.”

1.120 The Department in a written reply has also stated that few countries viz; China, Russia, Italy, Poland have adopted stricter norms. India has already adopted 1/10th of the internationally accepted limits.

1.121 Elaborating on the issue, Citizens of the State of Rajasthan, in their memorandum submitted to the Committee stated that the radiation emission limit allowed in China is 10 times less than in India even though China has more population and mobile usage. The towers in China are emitting 100 times less radiation, even though there are more mobile users in China.

1.122 When enquired about the views of the Department on the above issue, the Department submitted that the complete information about lower radiation norms by China is not available at this stage including pros and cons of such norms.

1.123 When further queried by the Committee that India should also examine the practices of the countries including China that have adopted lower emission norms than India, the Department stated as under:-

“The DoT is keeping a watch on various reports of WHO and ITU in this matter. Any revision of norms will be based on recommendations of these organizations and also on result of the studies being carried out by DST and ICMR.”

Chapter-III

Need for exploring new technological innovations

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

1.124 Retired Advisor (Technology), Department of Telecommunications, in his memorandum submitted to the Committee stated that high power radiating antennae should be avoided in future in high density populated areas by deploying low power radiating antennae (Micro, Pico and Femto). He has also cited some of the advantages of deploying low power radiating BTS in place of tower based high power radiating BTSs as under:-

- “(a) The fear of health hazards due to high radiations from mobile towers will be eliminated from the society as tower-less low powered BTS will be safe.
- (b) The safety of the buildings will not be compromised
- (c) The low powered BTS will be possible to be powered back up by solar or hybrid power systems, thus giving following vital advantages:
 - * Saving of precious diesel to the tune of 4 billion liters of diesel per year.
 - * Eliminating CO2 emission to the tune of 6 million tonnes per year.
- (d) Huge quantities of precious steel will be saved.
- (e) Skylines of the cities and towns can be kept clear.”

1.125 Elaborating further on the issue, the Retired Advisor(T), DoT, during the course of evidence before the Committee stated:-

“Sir, in developed countries, in USA and Europe, the practice of having towers on rooftops has already been abandoned. I have gone of course not many but to two three countries....xxxx....You go to any big country whether you go to New York or Paris or anywhere, do you find towers on the rooftops now? We don't find, Sir. So they have already adopted the techniques which I mentioned earlier. But our operators are not interested in doing so because it has financial implications.”

1.126 When the Committee enquired about the practicability of introducing such alternate low power radiating antennae in the country, the Department stated as under:-

“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.”

1.127 Further elaborating in the issue, the Department also stated that the use of these technologies, even in the indoor environment is very expensive.

1.128 The Department has also informed the Committee that micro and pico cell technologies are already being used in India for providing coverage in multi-storey buildings. The femto cell technology is relatively new and is expected to be used by the TSPs in due course. On mandating the TSPs to adopt such technologies for residential buildings, office building etc., it was stated that the use of particular technology may limit the choices of the TSPs with regard to technology options.

B. Installation of Light Emitting Diode (LED) based Electromagnetic Radiation (EMR) Meters

1.129 In a memorandum received by the Committee from Mechanical Engineering Student in Chennai (Shri Siddharth.V), the following suggestion was made in respect of creating an enabling mechanism for constant monitoring of radiations from mobile towers:

“In every tower there should be an indicator that shows the radiation level. If radiation level reaches above a dangerous threshold (scientifically pre-determined) value, due to technical snags, should automatically shut down the tower until the problem is rectified.”

1.130 On the above issue, Scientist ‘G’, BARC, Mumbai, in his memorandum submitted to the Committee also stated as under:-

“Such electronic meter must be installed in Basement/Society office of the buildings with mobile towers. Such meter should display green signal if EMR are below prescribed limits and must turn red through yellow in case unauthorized increase in tower capacity is introduced by operators. This will generate an atmosphere of belief and confidence in general public especially as the EMR are invisible radiations. Such radiation monitors are installed by Dept of Atomic Energy in all its establishments involving radiations.”

1.131 On the above suggestions received by the Committee for installing electronic LED meters to check tower emissions, the Department replied as under:-

“As per the available information, there is no such low cost meter that can make precision measurement and declare non-compliance. As stated before, compliance is ensured through the process of self-certification by the TSPs and audit by the TERM cells. It is to further clarify that the effect and level of radiation is at its minimum just below the tower, therefore it will be very low at ground/basement below the tower.”

1.132 When enquired about the effectiveness of LED based EMR meters in checking unauthorized increase in tower capacity by operators, Department stated:-

“A meter like the LED based EMR meters is not a solution.”

1.133 On the issue of manufacturing LED based meters, the Department stated:-

“Such instruments can be used after examination of their accuracy and calibration. However, no such manufacturer has approached TEC for testing of the product so far.”

1.134 Scientist ‘G’, BARC in his memorandum also suggested for the establishment of Central EMR Monitoring Control Units. He suggested:-

“All mobile towers must be compulsorily equipped with sending GPRS based EMR data transmissions to Central Control Room where competent authority can monitor errant/malfunctioning tower with exceeding EMR limits.”

1.135 When enquired about the specific views of the Department to the above suggestions, the Department stated as under:-

“In our understanding, technically the monitoring equipment need not to be installed at all the towers as the radiation pattern does not change until there is a change due to technical or operational reasons and hence continuous EMR monitoring may not be desirable. Presently there is no proposal to install such monitoring equipment in India in view of the EMR testing mechanism put in place by DoT.”

1.136 On the issue of continuous EMR monitoring of telecom towers, the Department in a written reply stated as under:-

“The radiation parameters of the BTS are submitted by the TSPs, along with the self-certificate. Such BTS are subjected to audit by the TERM cells

as per prescribed procedure. Any subsequent changes in the parameters are to be intimated by the TSPs along with the fresh self-certificate. Accordingly, the compliance to the radiation limits is ensured at all times. In case self-certificates are found wrong during audit, penalty is imposed on TSPs. Therefore, there is no immediate need to set up centralized monitoring systems.”

Chapter-IV

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

1.137 In the context of Supply of sub-standard mobile handsets to India by reputed global manufacturers, Retired Advisor (Technology), DoT in his memorandum submitted to the Committee stated as under:-

“It is to be noted that more than 90% of the mobile hand-sets, except about 10% coming from the grey market, are being supplied by the reputed global manufacturers like Nokia, Samsung, Blackberry etc. who are supplying the same to the whole world including the developed countries like USA, Europe, Japan etc including the countries of their origin. But in these countries, are observing all safety limit norms prescribed in those countries, although the sets are coming out from the same factories. The possible reason for resisting the norms in India comes to the mind of a common man is that, probably, the hand-sets being supplied in India are the ones rejected by the developed countries, not complying the norms prescribed in these countries, taking Indians granted to be treated in any way.”

1.138 When queried by the Committee about the existing mechanism to ensure that only those mobile handsets that meet international standards and are in conformity with DoT standards are imported in the country, the Department in a written reply stated as under:

“The standards for mobile phones is still under deliberation at Bureau of Indian Standards (BIS) technical Committee. Once the standard is approved, it shall be considered for implementation.”

1.139 On the reasons for the delay in finalizing the standards by BIS Technical Committee, the Department submitted as under:

“BIS has started deliberation on the draft Standards and may finalise soon following Standard Development Procedure. However, at present, the standards for mobile phones have been finalized by TEC and the same can be considered for implementation without waiting for the BIS report.”

1.140 With regard to the standards adopted for import/manufacture of the mobile phones in the country the Department stated:

“The presently available mobile phones use the Global System for Mobile (GSM)/Code Division Multiple Access (CDMA) air interface standards. There are other parameters also which have been provisioned in the TEC developed standard, including SAR value.”

1.141 On the quantum of penalty for violation, the Department informed the Committee that under the BIS Act, 1986, following punishment is mentioned:

“33. (1) Any person who contravenes the provisions of section 11, or section 12 or section 14 or section 15 shall be punishable with imprisonment for a term which may extend to one year or with fine which may extend to fifty thousand rupees, or with both.

(2) Any court trying a contravention under sub-section (1) may direct that any property in respect of which the contravention has taken place shall be forfeited to the Bureau.”

1.142 The Committee have also been informed that Hon’ble High Court of Allahabad, Lucknow Bench in a Writ Petition No. 11275 (M/B) of 2010 filed by Shri Ram Singh Jauhari Vs Uoi & Others has given direction vide its order dated 10.01.2012 to the Government of India to constitute a Committee consisting of five members of Electrical Engineering Department of the IITs Mumbai, Kharagpur, Kanpur, Delhi, Roorkee including Prof (Dr.) Girish Kumar and four other prominent persons of other scientific institutions of the country like AIIMS (Delhi), Indian Council of medical Research, etc. to submit a report so that the Government of India may take necessary precaution while granting permission for establishment of mobile towers as well as to regulate sale of mobiles with necessary precautions. In compliance of above order of Hon’ble High Court a Committee has been constituted vide this office letter no. 17-63/2011-CS-III dated 20.08.2013. The Committee is examining the matter and is expected to submit its recommendation within three months.

CHAPTER-V

Issues relating to Increasing Public Awareness and Grievance Redressal Mechanisms

A. Need for effective Grievance Redressal Mechanism

1.143 In some of the memoranda submitted to the Committee, a suggestion was made that the name and address of the operators, contact person details, address of complaint redressing authority etc., should be displayed on the dash board of each telecom towers as well as at easily accessible places in the locality. In this regard, the Department informed the Committee that the suggestion is being examined in consultation with stakeholders which include telecom service providers and infrastructure providers.

1.144 Shri Amit Kumar Maihan, in his memorandum submitted to the Committee submitted as under:-

“No specific provision is available to general public whereby details or information can be sought in respect of prescribed norms of radiation and level of radiation/waves emanating in their vicinity. The applicant would like to refer piece of information which suggest the general public do not have any option or right to know the level of radiation in vicinity thereby making them dependent on discretion of officers of concerned departments/regulators.”

1.145 Replying on the issue, the Department in their written reply stated as under:-

“DoT has prescribed the radiation norms to be followed by the telecom service providers which are also available on DoT website for the information to the general public. A mechanism is already available to ensure that TSPs adhered to the prescribed norms.”

1.146 On the remedies available to the ordinary citizen for redressal of their grievances related to radiation and possible health hazards, the Department a written reply stated as under:-

“Any citizen may submit their complaint to the Public Grievance portal of DoT or to the concerned TERM Cell. Further, a specific Complaint Handling System for Electro Magnetic Field (EMF) Radiation from Mobile Towers has also been launched by DoT on 4th October 2012 in Mumbai. Initially, this facility has been started for the residents of Mumbai. The online facility is available on DoT website “<http://www.dot.gov.in>” through a link

“Public Grievance – EMF Radiation”. There is a proposal to extend this facility to other metros also.”

1.147 On the plan of the Department on launching the system in remaining metros, the Department informed as under:-

“It has been decided to put in place the complaint redressing mechanism in Metro cities. The system has been made operational in Mumbai first, where number of complaints was initially high. Based on the experience gained in Mumbai and feedback from TCIL and TERM Cell, deliberations are underway for launching the system in remaining Metros.”

B. Setting up of State/District Telecom Committees

1.148 The Department informed the Committee that DoT has issued broad guidelines to all States on 23.08.2012 and one of the guidelines was formation of State and District Telecom Committees for ensuring regular interactions between TERM Cells of DoT and State/District administration. Hence, it is proposed to set-up State and District Telecom Committees for review of all Telecom Infrastructure related issues at State/District level.

1.149 On the status of formation of State and District Telecom Committees, the Department informed the Committee that the guideline issued by them were advisory in nature but so far no State Government has informed DoT on setting up the State and District Telecom Committees. Only Kerala State has invited DoT officials for discussion on the formulation of State Tower Policy in this regard.

1.150 Looking at the dismal performance of States/UTs for setting up of State/District Telecom Committees, the Committee enquired about the steps being taken by DoT for early constitution of these important Committees. To this, the Department stated as under:-

“In the revised guidelines issued by DoT on 01.08.2013, the formation of State Level and District Level Committees has been re-emphasized with the following terms:

In order to effectively address public grievances relating to installation of towers and issues related to telecom infrastructure, State Governments may setup:

State Level Telecom Committee (STC) consisting of officers from TERM Cells, State Administration, representative(s) of concerned Telecom Service Provider(s) and eminent public persons etc.

District Level Telecom Committee (DTC) consisting of officers from District Administration, representative(s) of concerned Telecom Service Provider(s) and eminent public persons etc.

The matter shall be taken up with the State Governments for early implementation of the Committees.”

1.151 The Committee were subsequently informed by the Department that as per the information available, States of Uttarakhand and West Bengal have formed State level Committees.

1.152 With regard to the powers and functions of this Committee, the Department informed that the terms of the Committees have not been specified by DoT. However, their main function shall be the redressal of grievances of the Stakeholders relating to installation of towers and issues related to Telecom Infrastructure.

1.153 On the issue of including representatives of local bodies/State Assemblies/Parliament etc. in these Committees so as to make them more effective, the Department replied that DoT has envisaged inclusion of eminent public persons in the Committees, to be constituted by State Governments.

CHAPTER-VI

Issues relating to TERM Cells

A. Shortage of manpower

1.154 The Committee noted that Telecom Enforcement Resource and Monitoring Cell (TERM) were created by the Government for having a continuous monitoring of compliance to prescribed norms by the Telecom Service Providers. With the increasing concerns over the harmful effects of Electromagnetic radiation on human health, the Government in the year 2010 decided that TERM Cells may be entrusted the work of cross checking the compliance of EMF radiation norms as prescribed by the Government. TERM Cell tests annually upto 10 per cent of new BTS sites randomly at its discretion. Additionally, BTS sites against which there are public complaints are also tested by TERM Cells. The Department also informed the Committee that a proposal for augmentation of manpower in TERM Cells is under consideration, so that the testing of BTS may be augmented.

1.155 Clarifying on the issue of randomly testing only 10 per cent of the new BTS, the Department submitted that as per amendment issued by Access Service Cell of DoT vide letter dated 10 December, 2010, it has been decided that TERM Cell shall test annually upto 10 percent of total BTS sites (including existing and new sites).

1.156 With regard to the violation of radiation norms and punitive action taken, the Committee were informed as under:-

“As on 30.06.2013 there are 747917 BTSs in the country. The number of BTS tested during the financial year 2010-11 (since 15.11.2010), 2011-12 & 2012-13 are 2440, 21709 & 28814 respectively. Violation of radiation norms were detected by TERM Cells in 128 cases. Demand Notices imposing penalty has been issued in 84 cases and show cause notices issued in 19 cases and remaining cases are under process for issue of show cause notices.”

1.157 On the percentage of BTS sites tested by TERM Cells during the last three years, the Committee were apprised as under:-

“The status testing carried out by TERM Cells is reproduced below:

	Approx number of BTS (in lacs) in the beginning of the year	Total Testing during the year	%age testing
Nov. 10 - March 11	5.58	2440	0.44
April 11 - March 12	6.20	21709	3.5
April 12 - March 13	7.14	28814	4.0
April 13 - June 13	7.42	6235	1st quarter

1.158 When the Committee enquired about the composition, mandate and functioning of TERM Cells, the Department submitted as under:-

“The TERM Cells are being headed by a Dy Director General level officer (Senior Administrative Grade (SAG)) supported by Junior Administrative Grade (JAG) and Senior / Junior Time Scale (STS)/(JTS) officers. The broad functions mandated to TERM Cells include ensuring 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 TSPs etc. The actual strength of TERM Cells is not adequate to test all the BTS sites across the country. The sanctioned /actual strength of the officials/staff in TERM Cells is as below:

Grade	Sanctioned strength	Working strength
HAG	NIL	NIL
SAG	34	34
JAG	68	55
STS/JTS	136	30(approx)
AD/JTO	NIL	NIL
TTA	NIL	NIL
Assistant	NIL	NIL”

1.159 On the plans to fill up these vacancies, the Department in their written reply stated as under:-

“From the officers repatriated from BSNL/ MTNL, 54 officers at SAG grade, 44 officers at JAG grade have been entrusted with the functional responsibility of TERM Cells. Apart from this 70 officers of Indian Telecom Service Gr ‘A’ are under their probationary training. After completion of their training, majority of them will be posted in TERM Cells. Further recruitment through UPSC is under process. For Group B, C & D posts,

some officials have been taken on loan from BSNL which may be further increased to meet the shortage.”

1.160 With regard to the measures to strengthen the existing mechanism of checking EMF radiations from mobile towers, the Department in their written reply stated as under:-

“Strict penalty regime has been put in place for violation of radiation norms. Further, a Complaint Handling System for Electro Magnetic Field (EMF) Radiation from Mobile Towers has also been launched by DoT on 4th October 2012 in Mumbai. Initially, this facility has been started for the residents of Mumbai. The online facility is available on DoT website “<http://www.dot.gov.in>” through a link “Public Grievance – EMF Radiation”. There is a proposal to extend this facility to other metros also.”

B. Non-availability of test equipment

1.161 On the issue of availability of adequate testing equipment with TERM Cells, the Department replied:-

“All the TSPs have been directed to make available the test instruments to the concerned TERM Cell on demand.”

1.162 When the Committee enquired about the reasons for relying on the test equipments provided by the Telecom Service providers, the Department informed that the procurement process for radiation test equipment for the TERM Cells is underway.

1.163 On the constraints being faced by the TERM Cells in fulfilling their mandate, the Committee were informed as under:-

“TERM Cells are fulfilling their mandate, inspite of constraints of staff particularly at executive and support level. As a stop gap arrangement, upto 7 Group ‘B’ officers are being borrowed from BSNL for each TERM Cell. Enhancement of Financial powers of TERM Cells for hiring of outsourced manpower is under consideration. Proposal for further augmentation of manpower in TERM Cells is also under consideration.”

C. Issues relating to ‘Self-Certificate’

1.164 On the issue of EMR radiations from mobile towers and ensuring compliance of such radiation to the prescribed norms, the Department in their Background Note stated as under:-

“DoT in the year 2008, adopted the ICNIRP norms and inserted a clause in the Unified Access Service Licence Agreement vide amendment dated 4th November, 2008 stating that “Licensee shall conduct audit and provide self-certificates annually as per procedure prescribed by Telecommunication Engineering Centre (TEC)/or any other agency authorized by Licensor from time to time for conforming to limits/levels for antennae (Base Station Emissions) for general public exposure as prescribed by International Commission on Non-Ionizing Radiation Protection (ICNIRP) from time to time.

Apart from above, Access Service Cell of DoT issued instructions, vide letter dated the 8th April, 2010, to all the Access Service Providers regarding implementation of radiation norms on electro Magnetic Field (EMF) exposure by Base Transceiver Stations (BTSs) by submitting the self certification for each and every BTS. The instructions, inter-alia, includes the following:-

- All base Station Transceivers (BTSs) must be self certified as meeting the radiation norms. Self certification is submitted to respective Telecom Enforcement Resource and Monitoring (TERM) Cells of DoT by the telecom service providers.
- If a site fails to meet the Electro Magnetic Radiation criterion, there is a provision of penalty of Rs. 5 lakh BTS per service provider. Service providers must meet the criterion within one month of the report of TERM Cell in such cases, after which site will be shut down.”

1.165 On the periodicity of submission of ‘Self-Certificate’, the Department replied that the periodicity of submission of ‘self-certificate’ by different Telecom Service Provider is once in two years.

1.166 Justifying the requirement of submitting ‘Self-Certificate’ of BTS towers only once in two years, the Department also stated as under:-

“The radiation parameters of the BTS remain constant, unless changed by the TSP. In case of change, the TSP has been mandated to issue revised self-certificate. Keeping this in view, the cycle of two years has been fixed for self-certification.”

1.167 On the reasons for adopting the Self-Certification of telecom towers by Telecom Service Providers instead of respective TERM Cells checking the radiation of telecom

towers, the Committee were informed by the Department of Telecommunications as under:-

The respective TERM Cells are checking the radiation from BTS towers. Self-certification is a process by which the telecom service provider ensures compliance to the prescribed radiation norms. The procedure has been adopted in consultation with the stakeholders considering the feasibility of implementation. However, TERM Cells are checking the self certified BTS site on random basis as per the prescribed procedure.

1.168 Elaborating on the numbers of telecom towers that were shut down due to non-compliance, the Department informed:-

“The Telecom Service Providers are submitting the ‘self-certificate’ of their BTS towers as per procedure. Total 12 BTS sites including 2 BTSs of Tata, 1 BTS of Idea, 1 BTS of Aircel, 1 BTS of Loop, 3 BTSs of Reliance, 2 BTSs of Airtel, 2 BTSs of Vodafone were shut down temporarily due to non-compliance to radiation limits.”

1.169 With regard to the details of penalty imposed since 1 September, 2012 since the revised prescribed limit came into effect, the Department in a written reply stated as under:-

“For violating the prescribed radiation limits, penalty has been imposed in 84 cases which include Airtel, Spice, Vodafone, TTSL, Idea, Dishnet Wireless (Aircel), Loop Telecom, MTNL, Reliance Comm, TTML, Uninor, Videocon.”

1.170 Taking note of the newspaper report that instead of ‘self-audit and self-certification’ as followed in India, some countries have resorted to a third party audit for having an unbiased checking of mobile tower radiation, the Committee desired to know about the information about the countries that have adopted ‘Third Party Audit’ for telecom towers. The Department, in its reply, however, stated that at present, no such information is available.

1.171 Elaborating the reasons on the basis of which method of ‘Self-Certification of telecom towers has been adopted in India, the Department informed the Committee as under:-

“India has adopted the self-certification along with sample audit & heavy penalty, used in many other sectors also. India is among few developing countries who have implemented such an elaborate procedure for monitoring the EMF compliance. International standards are being

followed for the testing of EMF Radiation. The detailed implementation procedure in other countries is presently not available.”

D. Effective implementation of prescribed Specified Absorption Rate (SAR) value for mobile handsets

1.172 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. The SAR Labs have been set up by the Department for verification of SAR values of mobile handsets and other hand held devices as declared by the manufacturer in compliance with the EMF exposure norms prescribed by the Government. In this regard, the Department in the Background Note informed the Committee as under:-

“ICNIRP has prescribed the following values for Specific Absorption Rate (SAR) for mobile handset:

For Frequency Range 10 MHz to 10 GHz	Whole body average SAR (W/Kg)	Localised SAR head & trunk (W/Kg)	Localised SAR limbs (W/Kg)
General Public Exposure	0.08	2	4

For the mobile handsets, DoT, in the year 2008, notified for compliance of Mobile Handsets being manufactured in India to conform to ICNIRP prescribed Specific Absorption Rate (SAR) limit of 2 W/kg in the frequency range of 10 MHz to 10 GHz.”

1.173 The Department in the Background Note also informed the Committee that from 1 September, 2013, only the mobile handsets with revised SAR value of 1.6 watt/kg averaged over a mass of 1 gram tissue are permitted to be manufactured or imported in India for domestic market. It is reported that India has so far been following a SAR limit of 2 watts/kg in accordance with ICNIRP norms. An Inter-Ministerial Committee has now curtailed the SAR level for mobile handsets further to 1.6 watt/kg average over a six minute period and taken over a volume containing a mass of 1 gram of human tissue. The SAR level shall now be displayed on handsets.

1.174 On the measures taken by the Department to ensure that mobile handset manufacturers strictly conform to prescribe SAR value from 1 September, 2013, the Department submitted as under:-

“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 (ILAC accredited labs) or accredited by Telecom Engineering Centre (TEC), India to TEC with a copy to DoT for compliance and necessary action. Such self declared SAR limits shall be subjected to TEC audit as and when required. However, the enforcement will be dealt as per applicable Act of the Government.”

1.175 The Committee were further informed by the Department that Indian Cellular Association (ICA) has stated that all the new design mobile phones being manufactured for domestic market are compliant to new norms and Mobile manufacturers Forum have made provision for display of SAR value by dialing *#07# in new mobile handsets conforming to revised norms.

1.176 When the Committee enquired about the provisions/penalties that would be imposed on those who are found manufacturing or importing the mobile handsets not complying with the revised SAR values w.e.f. 1st September, 2013, the Department in a written reply stated that Quantum of penalty will be as per provisions in the applicable Acts/Rules.

1.177 On the issue of making the customers aware of the new SAR value, the Department informed that the instructions have been circulated to manufacturers/importers through industry associations as well as print media and also placed on DoT website.

1.178 When further queried by the Committee for wider dissemination of this instruction, the Department stated as under:-

“A Handbook on “Mobile Communication - Radio waves and Safety” indicating various Dos and Don’ts related to mobile phone users clarifying various myths regarding deployment and use of radio waves had been prepared and under print for enhanced customer awareness to be given to the customer at the point of sale through mobile service providers. Precautionary guidelines for mobile phone users have been hosted on the DoT website. Also these instructions have been published in National

newspapers in Hindi, English and Regional newspapers in Regional languages.”

1.179 With regard to publicizing these instructions in regional languages also, the Department stated that these instructions have been published in National newspapers in Hindi, English and Regional newspapers in Regional languages.

CHAPTER-VII

Introduction of Green Energy in telecom sector

1.180 One of the mandates of the Government as envisaged in the NTP-2012 is continued adoption of green policy in telecom and incentivize use of renewable resources for sustainability. Regarding the plans of the Department for the gradual introduction of green energy in telecom sector, the Committee were informed that DoT has already issued directions to telecom service providers vide letter dated 23.01.2012, which envisages that at least 50% of rural towers and 20% of urban towers are to be powered by hybrid power (RET+ Grid Power) by 2015, while 75% of rural towers & 33% of urban towers to be powered with (RET + Grid Power) by 2020.

1.181 Elaborating on the steps being taken by the Department to reduce carbon footprint and introducing Carbon Credit Policy in the telecom sector, the Department stated:-

“Vide letter dated 23.01.2012, the telecom service providers have been directed to reduce their carbon footprint by adopting Renewable Energy Technologies (RETs) and deploying Energy Efficient Equipments. The directions in this regard envisages for an ultimate objective of achieving a maximum of 50% over the carbon footprint levels of the base year in rural areas and 66% in urban areas by 2020, with base year being 2011. The service providers should aim at Carbon emission reduction targets for the mobile network at 5% by the year 2012-2013, 8% by the year 2014-2015, 12% by the year 2016-2017 and 17% by the year 2018-2019.

In compliance to the above said DoT Directives, all Access providers except BSNL have submitted the base year i.e. (April, 2011 to March, 2012) carbon footprint report of their network operations to TRAI. Similarly, most of the NLDs, ILDs, and some of the ISPs have also submitted carbon footprint report for the base year 2011-12. From April 2012 onwards, Carbon footprint report are being received in TRAI on half yearly basis. First half year and second half year carbon footprint report for year 2012-13 have also been received from most of the access providers, NLDs, ILDs and some of the ISPs. Volunteer code of practice has also been submitted by all the telecom associations i.e. ISPAI, ACTO, COAI & AUSPI, in TRAI wherein service providers have committed various initiatives to reduce the carbon footprint of their network operation.”

1.182 In this regard, Shri Ram Kumar, Retired Advisor (Technology), DoT, in his memorandum submitted to the Committee, stated as under:-

- “* Due to high power radiating antennas, the requirement of power is high and, accordingly, consumption of diesel to maintain back up power supply is high.
- * About 5, 00,000 mobile towers are operating throughout the country, consuming about 4 billion liters of diesel per year.
- * More than 6 million tones of CO2 emission per year.”

1.183 On the points raised above, the Department was asked whether they have conducted any study to ascertain the amount of diesel consumed annually by Telecom Service Providers for operating telecom towers in the country. The Department replied that TRAI in its recommendation on “Approach towards Green Telecommunications” dated 12th April 2011 has stated that there is an average fuel consumption of 8760 liters of diesel every year per tower, assuming 8 hours of operation of DG sets.

1.184 On the steps being taken to overcome the major constraints and obstacles faced by the Department for introduction of Green Energy, the Department has stated as under:-

- “A Committee has been constituted in DoT to examine the following:
- Preparing a road map to facilitate increased use of Renewable Energy Technologies (RETs) for powering Telecom networks and to develop sector specific schemes for promotion of RETs.
 - To analyze the viability gap funding for deployment of RETs in Telecom.”

1.185 Elaborating on the major constraints and obstacles being encountered by the Department for the introduction of Green Energy, the Department informed the Committee that High Capital Expenditure (CAPEX), non-availability of clear south facing space and operation /maintenance of distributed sites across the country are some of the constraints and obstacles which have come out after discussion with the telecom industry for implementation of the green telecom.

1.186 On the concern raised by ASSOCHAM that the guidelines issued on 23rd January, 2012 are unrealistic and illogical since it ignores the ground realities and technical constraints, the Department has replied as under:-

- “The broad directions and goals to achieve the desired reduction in carbon emission through the use of Renewable Energy Technologies and energy

efficient equipments, laid down by DoT vide letters dated 23.01.2012, are based on the recommendations of Telecom Regulatory Authority of India (TRAI) dated 12th April, 2011.

Based on continuous interactions by TRAI with the service providers and their associations, i.e. ISPAI, ACTO, COAI & AUSPI have submitted 'Voluntary Code of Practice', wherein the service providers have committed to implement various energy efficient solutions including deployment of hybrid site. Telecom Regulatory Authority of India (TRAI) is monitoring the implementation of the introduction of Green Energy in telecom sector and TRAI is of the view that the stipulated targets can be achieved."

CHAPTER-VIII

Security related concerns due to import of telecom equipment

1.187 On the issue of security of telecom networks, the Department in their Background Note has stated as under:-

“With respect to security related concerns for expansion of telecom services in various zones of the country, Dot has issued an amendment dated 31 May, 2011 in Unified Access Service (UAS), National Long distance (NLD) and International Long Distance (ILD) licenses.

As per amendment, the licensee shall be completely and totally responsible for security of their networks. The licensee shall have the organizational policy on security and security management of their networks.

The licensee shall induct only those network elements into his telecom network, which have been got tested as per relevant contemporary Indian or international security standards. Further the licensee shall audit their network or get the network audited from security point of view once a year from a network audit and certification agency.

The licensee shall include all contemporary security related features and features related to communication security as prescribed under relevant security standards while procuring the equipments and implement all such contemporary features into the network.”

1.188 On being enquired about the number of studies done to ascertain security implications and risk involved due to dependence on imported equipment, the Committee were informed that no specific study has been carried out by the Department but it is assessed that the imported equipment, if not tested properly could cause security concerns due to vulnerabilities embedded and malware in them and that from 1 April, 2013 the certification shall be got done only from authorized and certified agencies/labs in India.

1.189 In view of the above, the Committee desired to know the number of authorized and certified agencies/labs for testing telecom equipments set up in the Country. To this, the department has replied that although some organisations are in advance stage of establishing the authorised security testing and certification labs in the country, but so far no authorised and certified agencies/labs for testing telecom equipment has been

set up in the country. However, pilot lab at Indian Institute of Bangalore has already been set up to develop the Security test standards, procedures, tools for security and certification of telecom equipment.

1.190 The Department further informed the Committee that even the deadline of 1st April, 2013 for testing and certification of telecom equipment in India has been extended to 1st October, 2013.

1.191 On the reasons for the failure to establish any authorized and certified agencies and extending deadline till 1 October, 2013 for testing and certification of telecom equipment in India, the Department stated:-

“Initially there were some reservations amongst the Industry against mandating the indigenous test standards and testing within India instead of relying on the global standards and international test agencies/ test labs. After the continuous efforts, regular interaction and firm stand, apparently there is an acceptance within Telecom Industry for security certification within the country. Thus, it has taken some time for the industry to imbibe the idea of such testing and certification within the country.

Further, understanding the test standards and developing the test processes and testing tools thereto, is a complex phenomena and it is taking some time to come out with requisite indigenous security standards for telecom equipments / network elements. Hence, the extension of deadline for testing and certification of telecom equipment in India has been extended till 1 October, 2013.”

1.192 With regard to the present mechanism that has been put in place by the Department to ensure that only those telecom equipment strictly complying to security norms are put in place, the Department informed the Committee as under:-

“Licensees have been inter-alia mandated through License amendment of May/June, 2011 that they shall induct only those network elements into their telecom network, which have been got tested as per relevant contemporary Indian or International Security Standards from any recognized international agency/ labs for that specific standard. It is also mandated that copies of test results and test certificates shall be kept by the licensee for a period of 10 years from the date of procurement of equipment. Thus, till the authorized Indian lab / agencies are established, licensees need to get their telecom equipment tested from recognized

international lab / agencies and the record of test results / reports is to be kept for 10 years, which can be verified by the DOT anytime, if required.

To verify the compliances of security conditions by the Telecom Service Providers, a proposal for establishing the Telecom Security Directorate has been proposed. Once this proposal is accepted, adequate man power will be available to carry out the security audit of the network of Telecom Service Providers. However, as an adhoc arrangement, one DDG and 8 directors have been recently posted for Security Audit. Presently, these officers are studying the subject matter and are likely to initiate the security audit work soon to verify the compliances by the Telecom Service Providers.”

1.193 On the measures available to deal with those Telecom Service Providers violating the prescribed security standards/norms, the Department has stated as under:-

“There is penal provision of upto Rs. 50 crores for the security breach. Besides the penalty, liability and criminal proceedings under the relevant provisions of various acts such as Indian Telegraph Act, Information Technology Act, Indian Penal Code, Criminal Procedure Code (CrPC) etc can be initiated. In such cases license of the licensee can also be cancelled, vendor or supplier who supplied the hardware/software, that caused the security breach, could be blacklisted for doing business in the country or both. The licensee has been mandated to include the clause of licensor discretion of blacklisting of vendor or supplier in the agreement signed with vendors/ suppliers, in case of any security breach.”

A. Setting up of Telecom Testing and Security Certification Centre

1.194 When the Committee sought the opinion of the Department regarding the newspaper reports that two years after the Department of Telecommunications decided to set up a telecom equipment testing lab at the Indian Institute of Science (IISc), Bangalore, to address security issues, foreign vendors have now refused to share their design details with the premier academic institute as it could hurt their business interests, the Department replied as under;-

“A pilot lab has been established at IISc, Bangalore, to develop the test standards, test processes and test tools for the telecom equipment testing and security certification. IISc, Bangalore has developed the Evaluation Assurance Level (EAL) - 4 for Voice over IP (VoIP) switches and EAL – 3 for Routers except few tests remaining. IISc, Bangalore is also working on open Base Trans-receive Station (BTS). IISc, Bangalore has reported that

vendors / manufacturers are reluctant to share their equipment details etc with IISc, being an academic institute. Since, EAL - 3 and above level of testing require equipment details etc sharing by the manufacturer with the test lab, DoT should consider to create the centre under the Government. Accordingly, proposal has been initiated to establish the centre for Telecom Testing and Security Certification in Government.”

B. Growth of telecom equipment manufacturing sector including R&D facilities in India

1.195 On the measures for the robust growth of telecom equipment manufacturing sector including R&D facilities in India, the Department has furnished the reply as under:-

“For robust growth of telecom equipment manufacturing sector including R&D, National Telecom Policy 2012, inter-alia, has following objectives:

- Promote the ecosystem for design, Research and Development, IPR creation, testing, standardization and manufacturing i.e. complete value chain for domestic production of telecommunication equipment to meet Indian telecom sector demand to the extent of 60% and 80% with a minimum value addition of 45% and 65% by the year 2017 and 2020 respectively.
- Create a corpus to promote indigenous R&D, IPR creation, entrepreneurship, manufacturing, commercialisation and deployment of state-of-the-art telecom products and services during the 12th five year plan period.

Following measures are suggested for robust growth of telecom equipment manufacturing including R&D in telecom sector:

- i) Create corpus for R&D, entrepreneurship development, product development and its commercialisation
- ii) Set up Telecom Standard Development Organisation in India
- iii) Set up test facility for product development
- iv) Incentivise ecosystem from R&D, Design development, creation of IPR up to product commercialisation
- v) promote telecom equipment manufacturing including units for manufacture of components, sub-assemblies
- vi) Incentivise export of telecom equipment.”

PART-II

OBSERVATIONS/RECOMMENDATIONS

Introductory

2.1 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.

2.2 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 organisations, 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.

(Para Nos. 2.1 & 2.2, Recommendation No. 1)

Need for clear defined role for setting up of telecom towers

2.3 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.

2.4 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.

(Para Nos. 2.3 & 2.4, Recommendation No. 2)

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

2.5 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.

2.6 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.

(Para Nos. 2.5 & 2.6, Recommendation No. 3)

Structural Safety for setting up of telecom towers

2.7 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.

(Para No. 2.7, Recommendation No. 4)

Sharing of Telecom Towers

2.8 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.

(Para No. 2.8, Recommendation No. 5)

Issues relating to health hazards from EMF emission

2.9 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.

2.10 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 $1/10^{\text{th}}$ of ICNIRP prescribed norms.

(Para Nos. 2.9 & 2.10, Recommendation No. 6)

Restrictions on setting up of mobile towers in residential areas

2.11 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.

(Para No. 2.11, Recommendation No. 7)

Restrictions on setting up towers in schools, colleges and hospitals

2.12 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.

(Para No. 2.12, Recommendation No. 8)

Need for India Specific long term Research

2.13 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.

2.14 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.

(Para Nos. 2.13 & 2.14, Recommendation No. 9)

International practices and countries having lower emission standards

2.15 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.

(Para No. 2.15, Recommendation No. 10)

Need for exploring new technological Innovations

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

2.16 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.

(Para No. 2.16, Recommendation No. 11)

Installation of LED based EMR meters

2.17 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.

2.18 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.

(Para No. 2.17 & 2.18, Recommendation No. 12)

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

2.19 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.

(Para No. 2.19, Recommendation No. 13)

Need for Effective Grievance Redressal Mechanism

2.20 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.

(Para No. 2.20, Recommendation No. 14)

Setting up of State/District Level Telecom Committees

2.21 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 lukewarm 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 Committees are monitoring the Schemes/programmes relating to Ministries of Rural Development, Drinking Water, Panchayati Raj and Power (Rajiv Gandhi Grameen Vidhyutikaran Yojna).

(Para No. 2.21, Recommendation No. 15)

TERM Cells: Issues relating to shortage of manpower and equipment

2.22 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.

(Para No. 2.22, Recommendation No. 16)

Shortage of equipment in Term Cells

2.23 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.

(Para No. 2.23, Recommendation No. 17)

Issues relating to 'Self-Certificate'

2.24 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 in mis-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.

(Para No. 2.24, Recommendation No. 18)

Effective implementation of prescribed Specific Absorption Rate (SAR) Value for mobile handsets

2.25 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.

2.26 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.

(Para Nos. 2.25 & 2.26, Recommendation No. 19)

Need for Introduction of Green energy in Telecom Sector

2.27 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 atleast 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.

2.28 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.

(Para Nos. 2.27 & 2.28, Recommendation No. 20)

Security related concerns due to Imported Telecom equipment

2.29 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.

2.30 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.

2.31 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.

(Para Nos. 2.29, 2.30 & 2.31, Recommendation No. 21)

New Delhi
10 February, 2014
21 Magha, 1935 (Saka)

RAO INDERJIT SINGH
Chairman,
Standing Committee on
Information Technology

DEPARTMENT of TELECOMMUNICATIONS
ADVISORY GUIDELINES FOR STATE GOVERNMENTS FOR
ISSUE OF CLEARANCE FOR INSTALLATION OF MOBILE TOWERS
(Effective from 01.08.2013)

1. Indian telecom sector has witnessed phenomenal growth and mobile telephony in particular has revolutionized in the country over the past decade. Providing telephone coverage across the country has been one of DoT's top priority areas. Out of 921 million connections, 891 million are wireless, as on May 2013. The popularity of cell phone and wireless communication devices has resulted in a proliferation of cell towers across the country.
2. Fixation of standards for exposure limits of radio frequency field emissions from mobile base stations, monitoring their compliance, all radiation related technical issues, issues of Access Service Licence / Infrastructure Provider registration and SACFA clearance for frequency allocation at any location are dealt with by DoT.
3. India has adopted strict limit for radiation from Base Transceiver Station (BTS), as below, which is 1/10th of the International norms (ICNIRP):

Frequency in MHz	Power density limit
900	0.45 watt/m ²
1800	0.9 watt/m ²
2100 and above	1 watt/m ²

4. Broad guidelines for issue of clearance for installation of mobile phone towers were issued on 23.08.2012 and later modified on 26.03.2013. Subsequently, on the basis of feedback received after deliberations made with the state government officials and various stake holders on 16.04.2013 and holding further consultations thereafter, the guidelines have been finalized for the state governments. These are detailed in A and B below. ***These guidelines are issued in supersession of all earlier guidelines on the subject.***

A. Documents to be submitted by Telecom Service Providers/ Infrastructure Providers for obtaining clearance from local bodies / state governments for installation of mobile towers:

I. Copy of relevant license / Infrastructure Provider Registration Certificate from Department of Telecommunications.

II. Data Sheet

- a) Name of Service/Infrastructure Provider
- b) Location
- c) Tower Reference:
 - i) Height, ii) Weight iii) Ground/Roof Top iv) Pole/wall mounted v) Number of antennae

- III. Copy of SACFA clearance / copy of SACFA application for the said location submitted to WPC wing of DoT with registration number as WPC acknowledgement along with undertaking that in case of any objection/ rejection, TSPs/ IPs will take corrective actions / remove the tower.
- IV. Copy of structural stability certificate for ground based tower. In case of roof top BTS towers, structural stability certificate for the building and tower based on written approvals of any authorized Structural Engineer of state/local bodies/Central Building Research Institute (CBRI), Roorkee/ IIT/NIT or any other agency authorized by local body.
- V. Copy of the type test certificate issued by Automotive Research Association of India (ARAI) to the manufacturers of the Diesel Generator (DG) Sets.
- VI. Copy of clearance from Fire Safety Department only in case for high rise buildings where Fire Clearance is mandatory.
- VII. For forest protected areas, the copy of clearance from State Environment & Forest Department, if applicable.
- VIII. The local bodies may also seek submission of the copy of No Objection Certificate (NOC) from Building Owner / entities having roof top rights or roof top tenants in case of roof based tower/ land owner in case of ground based tower, as the case may be. As per their rules in force, State Governments, at their discretion, may seek fresh NOC at the time of renewal of site (tenancy) contract for mobile tower.
- IX. Acknowledgement receipt issued by TERM Cells (DoT) of the self-certificate submitted by Telecom Service Provider/ Infrastructure Provider in respect of mobile tower/ BTS (ground based/ roof top/ Pole/ wall mounted) in the format as prescribed by TEC, DoT, establishing / certifying that all General Public areas around the tower will be within safe EMR exposure limit as per peak traffic measurement after the antennae starts radiating.

B. Action by State government/Local body

- I. Nominal one time Administrative Fee as may be decided by the State Government to recover its costs on the issue of permission for installation of Tower.
- II. Single Window Clearance may be provided in a time bound manner to telecom service provider / infrastructure provider by the local body / State Government. This will ensure issuance of faster clearances.
- III. Telecom towers have been given infrastructure status by Government of India vide gazette notification no 81 dated 28.03.2012. All benefits, as applicable to infrastructure industry, should be extended. **Electricity connection may be provided to BTS site on priority.**

- IV. Telecom installations are lifeline installations and a critical infrastructure in mobile communication. In order to avoid disruption in mobile communication, an essential service, sealing of BTS towers / disconnection of electricity may not be resorted to without the consent of the respective TERM Cell of DoT in respect of the EMF related issues.
- V. State Governments along with DoT may organise public awareness programmes involving civil society members.
- VI. In order to effectively address **Public Grievances** relating to installation of towers and issues related to telecom infrastructure, State Governments may setup:
 - State Level Telecom Committee (STC) consisting of officers from TERM Cells, State Administration, representative(s) of concerned Telecom Service Provider(s) and eminent public persons etc.
 - District Level Telecom Committee (DTC) consisting of officers from District Administration, representative(s) of concerned Telecom Service Provider(s) and eminent public persons etc.

C. Action by DoT/ TERM Cells

- I. Public awareness programme (Through DoT web portal / Govt. Publication).
- II. a) For all the existing as well as new BTSs / Towers, Telecom Service Providers are required to submit self-certificates periodically in the format as prescribed by TEC, DoT, in order to ensure that normally all general public areas around the site are within the safe EMR exposure limits. Any violation noticed attracts heavy penalties on Telecom Service Provider(s) and may also lead to shut down of BTS in case the violation persists.

b) The TERM Cells have been given clear instructions with regard to the technical audit of BTS, including for radiation from towers within safe limits. These include roof top/ ground based/ pole mounted/ wall mounted towers. They will also verify antenna orientation, safe distance from the tower (exclusion zone) etc. Installation and augmentation of BTS and antenna is a continuous process. DoT is organizing frequent workshops for these officers to ensure observance of the latest guidelines issued by DoT on the subject of EMF radiation and public safety. Additional Guidelines for TERM Cells as follows: 4

**Additional Guidelines to TERM Cells for auditing BTS
For EMF radiation
(Effective from 01.08.2013)**

1. Instructions/guidelines have been issued to the TERM Cells for auditing the RF radiations from BTS for compliance to the prescribed norms. Following are additional guidelines to TERM Cells in the matter.

2. With a view to strengthen monitoring and compliance of safety aspects / provisions in regard to radio frequency emissions from mobile towers, TERM Cells may take the following also into account while conducting their audits for the purpose of ensuring that all general public areas are within safe EMF exposure limits as prescribed by DoT.

- In case of both ground based towers & roof top towers, there shall be no building right in front of the antenna(e), of equivalent height taking into account the tilt of the lowest antenna on tower as per details in the table below. Further, the antennae at the same height only are to be counted, as the beam width of the mobile antennae, in the vertical direction, is very narrow.

Number of antenna(e) pointed in the same direction	Building/Structure safe distance from the antenna(e) at the same height (in meters)
1	20
2	35
4	45
6	55

- The distance figures in the above table are based on empirical estimation considering that all the antennae are emitting at their maximum RF power of 20 Watts and exactly in the same direction with same height (a worst case scenario). In practice, the values of safe distance of buildings will depend upon actual deployment scenarios and mostly, may be far less than depicted above.

3. Wall Mounted/Pole mounted Antenna:

- Wherever the 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 installations will have to comply with the radiation limits.
- As far as safe distance of buildings from antenna is concerned, guidelines as given above will apply.

**STANDING COMMITTEE ON INFORMATION TECHNOLOGY
(2011-2012)**

MINUTES OF THE THIRD SITTING OF THE COMMITTEE

The Committee sat on Friday, the 18th November, 2011 from 1100 hours to 1300 hours in Committee Room '53', First Floor, Parliament House, New Delhi.

PRESENT

Shri Rao Inderjit Singh –Chairman

MEMBERS

Lok Sabha

2. Shri Rajendra Agrawal
3. Smt. Sarika D.S. Baghel
4. Shri Nikhil Kumar Choudhary
5. Shri Charles Dias
6. Smt. Darshana Jardosh
7. Shri Tapas Paul
8. Shri Rajiv Ranjan Singh *alias* Lalan Singh
9. Smt. Seema Upadhyay

Rajya Sabha

10. Shri M.P. Achuthan
11. Shri Salim Ansari
12. Shri Mohammad Adeb
13. Shri Rajkumar Dhoot
14. Shri P. Rajeeve

SECRETARIAT

- | | | | |
|----|---------------------|---|------------------|
| 1. | Shri T.K. Mukherjee | - | Joint Secretary |
| 2. | Smt. Sudesh Luthra | - | Director |
| 3. | Dr. Sagarika Dash | - | Deputy Secretary |

Witnesses
Representatives of the Department of Telecommunications

Sl. No.	Name	Designation
1.	Shri Rentala Chandrashekhar	Secretary (T)
2.	Shri Chandra Prakash	Member (T) ex-officio Secretary to Government of India
3.	Shri J.K. Rao	Advisor (T)
4.	Shri S.R. Rao	Additional Secretary (T)
5.	Dr. Ashok Chandra	Wireless Advisor ex-officio Additional Secretary to Government of India
6.	Shri N.K. Srivastava	Sr. Dy. Director General (TEC)
7.	Shri A.K. Mittal	Sr. Dy. Director General (AS)
8.	Shri P.K. Panigrahi	Sr. Dy. Director General (BW)
9.	Shri Malay Srivastava	Joint Secretary (T)
10.	Shri R. K. Upadhyay	CMD, BSNL
11.	Shri Kuldeep Singh	CMD, MTNL
12.	Shri G.P. Srivastava	Dy. Director General (CS)
13.	Shri R.K. Pathak	Dy. Director General (IP)
14.	Shri Ram Narain	Dy. Director General (S.Term)
15.	Shri Suresh Chandra Sharma	Dy. Director General (C&A)

2. At the outset, the Chairman welcomed the Members to the sitting of the Committee convenedxxxxx..... and to have briefing by the representatives of the Department of Telecommunications (Ministry of Communications and Information Technology) on the subject 'Norms for setting up of telecom towers, its harmful effects and Setting up Security Standards in expansion of telecom facilities.'

3. xxxxx xxxxx xxxxx xxxxx xxxxx.

4. xxxxx xxxxx xxxxx xxxxx xxxxx.

5. The Committee, thereafter, took up the next agenda i.e. briefing by the representatives of the Department of Telecommunications on the subject 'Norms for setting up of telecom towers, its harmful effects and Setting up Security Standards in expansion of telecom facilities.'

(The representatives of the Department of Telecommunications were then called in)

6. The Chairman welcomed the representatives of the Department of Telecommunications (Ministry of Communications and Information Technology) to the sitting of the Committee. He also drew the attention of the representatives to Direction 55(l) relating to confidentiality of the matter till the Report is presented to the House.

7. The representatives of the Department of Telecommunications then briefed the Committee about the various aspects related to the aforesaid subject which included norms for setting up telecom towers, safety aspects of telecommunications in respect of infrastructure and mobile handsets, research findings of the studies carried out both at National and International levels to establish EMF radiation on human health, BIS standards for mobile handsets to test SAR value, etc. through a Power Point presentation. The representatives also responded to the queries of the Members during the course of deliberations.

A copy of verbatim proceedings of the sitting has been kept.

The Committee, then, adjourned.

**STANDING COMMITTEE ON INFORMATION TECHNOLOGY
(2012-13)**

MINUTES OF THE SIXTH SITTING OF THE COMMITTEE

The Committee sat on Tuesday, the 5th March, 2013 from 1500 hours to 1740 hours in Committee Room 'D', Ground Floor, Parliament House Annexe, New Delhi.

PRESENT

Shri Rao Inderjit Singh – Chairman

MEMBERS

Lok Sabha

2. Shri Rajendra Agrawal
3. Shri Raj Babbar
4. Shri Nikhil Kumar Choudhary
5. Shri Rajen Gohain
6. Smt. Darshana Jardosh
7. Dr. Thokchom Meinya
8. Shri Tapas Paul
9. Shri Radhe Mohan Singh (Ghazipur)
10. Smt. Seema Upadhyay

Rajya Sabha

11. Shri Joy Abraham
12. Shri Mohammed Adeb
13. Shri Salim Ansari

Secretariat

- | | |
|-------------------------|-----------------------|
| 1. Shri Brahm Dutt | - Joint Secretary |
| 2. Shri N.C. Gupta | - Director |
| 3. Shri Ajay Kumar Garg | - Additional Director |
| 4. Dr. Sagarika Dash | - Deputy Secretary |

5. At the outset the Chairman apprised about day's agenda i.e. evidence of representatives of Department of Telecommunications in connection with examination of 'Norms for setting up of telecom towers, its harmful effects and setting up security standards in expansion of telecom facilities'.

6. The Chairman welcomed the representatives of the Department of Telecommunications to the sitting of the Committee and drew their attention to the provisions of Direction 55(1) of the Directions by the Speaker, Lok Sabha regarding confidentiality of the proceedings till the report on the subject is presented to the House and Direction (58) regarding the evidence liable to be treated as public. Thereafter, the representatives of the Department of Telecommunications made a Power Point Presentation covering various issues relating to the subject viz. norms for setting up telecom towers, prescribed radiation norms, ICMR Report 2006 on RF exposure, Inter-Ministerial Committee on radiation, current radiation norms, Committee constituted by Department of Science and Technology, steps taken by DoT to reduce radiation hazards, introduction of green energy and reports of international bodies on radiation. Clarifications sought by the Committee on various issues relating to the subject were replied to by the witnesses. The representatives of the Department/BSNL assured the Committee to furnish written replies on the points in respect of which information was not readily available with them. The Chairman then thanked the representatives for appearing before the Committee and furnishing information in connection with the examination of the subject.

[The witnesses then withdrew]

A verbatim record of proceedings of the sitting has been kept separately.

The Committee, then, adjourned

**STANDING COMMITTEE ON INFORMATION TECHNOLOGY
(2012-13)**

MINUTES OF THE FIFTEENTH SITTING OF THE COMMITTEE

The Committee sat on Wednesday, the 24th July, 2013 from 1500 hours to 1800 hours in Committee Room 'C', Parliament House Annexe, New Delhi.

PRESENT

Shri Rajendra Agrawal– In the Chair

MEMBERS

Lok Sabha

2. Shri Nikhil Kumar Choudhary
3. Shri A. Ganeshamurthi
4. Shri Rajen Gohain
5. Smt. Darshana Jardosh
6. Shri Baidya Nath Prasad Mahato
7. Dr. Thokchom Meinya
8. Dr. Prasanna Kumar Patasani
9. Smt. Seema Upadhyay

Rajya Sabha

10. Shri Joy Abraham
11. Shri Salim Ansari
12. Shri Bharatsinh Prabhatsinh Parmar
13. Dr. C.P. Thakur

Secretariat

- | | |
|-------------------------|-----------------------|
| 1. Shri Brahm Dutt | - Joint Secretary |
| 2. Shri N.C. Gupta | - Director |
| 3. Shri Ajay Kumar Garg | - Additional Director |
| 4. Dr. Sagarika Dash | - Deputy Secretary |

List of experts/organizations/stakeholders who appeared before the Committee

I. Shri Ram Kumar, Retired Advisor (Technology), Department of Telecommunications

II. **Association of Unified Telecom Service Providers of India (AUSPI) & Cellular Operators Association of India (COAI)**

1. Shri Ashok Sud, Secretary General, Association of Unified Telecom Service Providers of India
2. Shri Vikram Tiwathia, Additional Director General, Cellular Operators Association of India
3. Mr. C S Rao, President, AUSPI & President Reliance Communications
4. Mr. Anand Dalal, Vice-President, AUSPI & Sr. Vice President, Tata Tele Service Ltd.
5. Ms. Jyoti Pawar, Bharti Airtel
6. Ms. Anjali Hans, Vodafone

III. **Associated Chambers of Commerce and Industry of India (ASSOCHAM)**

1. Mr. T.V. Ramachandran, Chairman, ASSOCHAM Telecom Committee
2. Mr. T.R. Dua, Member, ASSOCHAM Telecom Committee
3. Ms. Kanupriya Bhardwaj, Vodafone India, Member ASSOCHAM
4. Mr. Ajay Sharma, Senior Director, ASSOCHAM

IV. **Citizen Groups of Mumbai**

1. Ms. Juhi Chawla Mehta
2. Shri Prakash Munshi
3. Ms. Veena Singhal

2. In the absence of the Chairman, the Committee chose Shri Rajendra Agrawal, a Member of the Committee to act as the Chairman for the sitting in accordance with Rule 258(3) of the Rules of Procedure and Conduct of Business in Lok Sabha.

3. At the outset, the Chairman welcomed the Members to the sitting of the Committee convened to hear the views/suggestions of the individuals/experts/organizations and stakeholders, in connection with examination of the subject **'Norms for setting up of telecom towers, its harmful effects and setting up security standards in expansion of telecom facilities'**.

4. The aforesaid individuals/experts and representatives of each of the organization were heard by the Committee separately and in each case their attention was drawn to the provisions of Direction 55(1) regarding confidentiality of the proceedings and Direction 58 regarding evidence liable to be treated as public.

5. The Committee first heard the views/suggestions of Shri Ram Kumar, Retired Advisor (Technology), Department of Telecommunications. He briefed the Committee about the various issues related to the subject *viz.* possible health effects of radiations from BTS telecom towers and mobile handsets; recent studies conducted by various agencies including WHO and Bioinitiative Report 2012 which have talked about the possible carcinogenic effects of radiation on humans; the refusal of the operators to accept the findings of these reports; switching over to deployment of small antennae with alternate technologies such as Micro, Pico and Femto type of cells and their financial implications; pollution caused by diesel to run high powered radiating antennas; structural safety of the buildings; amount of steel being used for setting up towers and the diversion of steel for alternate use; security risks of excessive dependence on imported telecom equipments, etc. He also informed the Committee that he was the Chairman of the Inter-Ministerial Committee which was constituted for revising norms for radiation limits for BTS towers and SAR limits for mobile handsets and that Committee submitted its report to the Government in November, 2010. Clarifications sought by the Committee were replied to by the witness.

(The witness then withdrew)

6. The Committee, then, heard the views/suggestions of the representatives of Association of Unified Telecom Service of India (AUSPI) and Cellular Operators Association of India (COAI) on the subject. The representatives of AUSPI and COAI through a Power Point Presentation highlighted various issues relating to Indian Mobile Industry; link between increase in teledensity and economic growth; features of National Telecom Policy, 2012; continuous monitoring and up-dation done by Department of Telecommunications to check Electro Magnetic Fields (EMF) from telecom towers; implementation of ICNIRP guidelines as recognized by WHO; need for a uniform national guidelines for setting up of towers; setting up of security standards for telecom, etc. The Committee sought clarifications on few aspects which were replied to by the witnesses.

(The witnesses then withdrew)

7. The Committee, thereafter, heard the views/suggestions of the representatives of Associated Chambers of Commerce and Industries of India (ASSOCHAM) on the subject. The representatives of ASSOCHAM through Power Point Presentation explained the Committee various issues related to the subject. The issues, *inter-alia*, included the views of the leading experts that had suggested no evidence of adverse effects from exposure within limits and recent scientific research; lack of balance in the Bioinitiative Report, 2012; study on electromagnetic radiation emanating from cellular towers being undertaken jointly by DoT and Department of Science and Technology in collaboration

with ICMR, Ministry of Environment and Forests; DoT's initiative on EMF; issues related to tower installation and other related issues, etc. The Committee sought clarifications on few aspects and the same were replied to by the witnesses.

(The witnesses then withdrew)

8. At the end, the Committee heard the views/suggestions of the representatives of Citizen Groups of Mumbai on the subject. The representatives through Power Point Presentation highlighted to the Committee various issues related to the subject, which *inter-alia*, included nature of mobile tower antenna and mobile phone radiation; health risks posed by clusters of antenna atop buildings and homes in densely populated areas; ill-effects from constant use of mobile phones; creating awareness about radiation and safe use of mobile phones, etc. The Committee's queries related to the subject were replied to by the witnesses.

(The witnesses then withdrew)

9. The Chairman at the end of each discussion thanked the individuals/experts/representatives of each of the organizations for appearing before the Committee and furnishing valuable information in connection with examination of the subject. The Committee also directed the individuals/experts/representatives to furnish documents with regard to the issues on which the information was not readily available.

A copy of verbatim proceedings of the sitting has been kept on record separately.

The Committee then adjourned.

**STANDING COMMITTEE ON INFORMATION TECHNOLOGY
(2012-13)**

MINUTES OF THE SIXTEENTH SITTING OF THE COMMITTEE

The Committee sat on Tuesday, the 13th August, 2013 from 1500 hours to 1600 hours in Committee Room '62', Parliament House, New Delhi.

PRESENT

Shri Rao Inderjit Singh – Chairman

MEMBERS

Lok Sabha

2. Shri Abdul Rahman
3. Shri Rajendra Agrawal
4. Shri Nikhil Kumar Choudhary
5. Smt. Darshana Jardosh
6. Dr. Thokchom Meinya
7. Dr. Prasanna Kumar Patasani
8. Tapas Paul
9. Smt. Seema Upadhyay

Rajya Sabha

10. Shri Joy Abraham
11. Shri Mohammed Adeeb
12. Shri Salim Ansari
13. Dr. C.P. Thakur

Secretariat

1. Shri Brahm Dutt - Joint Secretary
2. Shri N.C. Gupta - Director
3. Shri Ajay Kumar Garg - Additional Director
4. Dr. Sagarika Dash - Deputy Secretary

List of representatives of the Department of Telecommunications

1.	Shri M.F. Farooqui	Secretary (DoT) & Chairman, Telecom Commission
2.	Shri S.C. Misra	Member (S)
3.	Smt. Nirmala Pillai	Member (F)
4.	Shri Anil Kaushal	Member (T)
5.	Shri R.K. Bhatnagar	Advisor (T)
6.	Shri N. Ravi Shankar	Administrator (USOF)
7.	Shri R.J.S. Kushwaha	Wireless Advisor
8.	Shri P.K. Panigrahi	Sr. DDG (BW)
9.	Shri S.S. Sirohi	Sr. DDG (TERM)
10.	Shri R.K. Upadhyay	CMD, BSNL
11.	Shri A.K. Garg	CMD, MTNL
12.	Shri Ram Narain	DDG (Security)

2. At the outset, the Chairman welcomed the Members to the sitting of the Committee convened to take evidence of the representatives of the Department of Telecommunications in connection with examination of the subject 'Norms for setting up of telecom towers, its harmful effects and setting up security standards in expansion of telecom facilities'.

[The representatives of the Department were then called in]

3. The Chairman welcomed the representatives of the Department of Telecommunications to the sitting of the Committee and drew their attention to Direction 55(1) of the Directions by the Speaker, Lok Sabha regarding confidentiality of the proceedings and Direction 58 regarding evidence liable to be treated as public.

4. After introduction by the witnesses, the Secretary of the Department provided an overview of the subject. Thereafter, the representative of the Department highlighted and explained through power point presentation the following aspects:-

- i. Issues relating to setting up of towers, such as, location of towers, obtaining siting clearance from WPC and permission from local bodies;
- ii. Revised guidelines for setting up of telecom towers;

- iii. Radiation norms, such as, ICNIRP norms, submission of Self-Certificates and Inter-Ministerial Committee Report;
- iv. Monitoring of radiation norms, such as, provision of penalty of Rs. 5 lakh per BTS per Service Provider and Monitoring done by TERM Cells,
- v. Norms for mobile handsets, such as, action taken on the recommendation of Inter Ministerial Committee to reduce SAR value from 2 watt/kg to 1.6 watt/kg average over a mass of 1 gram of human tissue w.e.f. 1 September, 2013;
- vi. Research work being done by Department of Science and Technology;
- vii. WHO Report relating to the subject and ICNIRP Statement 2009; and
- viii. The steps and safety measures taken by DoT and public awareness on the issue.

5. The Committee, thereafter, sought clarifications on various issues related with the subject like impact of EMF radiation on biodiversity, composition of the Committee appointed by Department of Science and Technology for research on the subject, structural safety of telecom towers, penalty imposed on those service providers found violating the prescribed radiation limits, precautionary guidelines related to mobile usage, measures to increase public awareness, etc. and the same were replied to by the witnesses. In the concluding remark, Chairman emphasized on the need to have India specific research on health hazards of EMF radiation from telecom towers and mobile handsets, ability of the TERM Cells to monitor the telecom towers, uniform policies for installation of towers, etc. The Committee also asked the representatives of the Department to furnish documents with regard to the issues on which the information was not readily available.

(The witnesses then withdrew)

A copy of verbatim proceedings of the sitting has been kept on record separately.

The Committee then adjourned.

**STANDING COMMITTEE ON INFORMATION TECHNOLOGY
(2013-14)**

MINUTES OF THE SEVENTH SITTING OF THE COMMITTEE

The Committee sat on Monday, the 10th February, 2014 from 1000 hours to 1030 hours in the Chamber of Hon'ble Chairman, Room No. 145-A, Third Floor, Parliament House, New Delhi.

PRESENT

Shri Rao Inderjit Singh—Chairman

MEMBERS

Lok Sabha

2. Shri Rajendra Agrawal
3. Shri Khagen Das
4. Dr. (Prof.) Thokchom Meinya
5. Dr. (Prof.) Prasanna Kumar Patasani
6. Shri Radhe Mohan Singh (Gazipur)
7. Smt. Seema Upadhyay

Rajya Sabha

8. Shri Salim Ansari
9. Shri Basawaraj Patil
10. Dr. Kanwar Deep Singh

SECRETARIAT

- | | | | |
|----|-------------------|---|---------------------|
| 4. | Shri Brahm Dutt | - | Joint Secretary |
| 5. | Shri N.C. Gupta | - | Director |
| 6. | Shri A.K. Garg | - | Additional Director |
| 7. | Dr. Sagarika Dash | - | Deputy Secretary |

2. At the outset, the Chairman welcomed the Members to the sitting of the Committee convened to consider two original Reports viz. (i) xxxxx and (ii) Draft Report on 'Norms for setting up of telecom towers, its harmful effects and setting up of security standards in expansion of telecom facilities', relating to xxxxx and Department of Telecommunications (Ministry of Communications and Information Technology) respectively. The Committee, then, took up for consideration the Reports and adopted the same without any modification. The Committee, then, authorized the Chairman to finalize and present the Reports to the House.

3. The Committee placed on record their appreciation for the assistance rendered to them by the officials of Lok Sabha Secretariat attached to the Committee.

The Committee, then, adjourned.

xxxxx Matter not related to the Report.