

To,

Mr. Lav Gupta,

Principal Advisor (TD)

Telecom Regulatory Authority of India

New Delhi

Subject: "Consultation Paper on Green Telecommunications, No 3/2011, dated 3rd. February, 2011 by TRAI

Dear Sir,

As a matter of fact TRAI consultation paper is based on the data taken from international studies. Ground reality in India is entirely different. It would have been good if this paper was circulated after through analysis of Indian Telecom networks by an independent agency or by TRAI itself. If we take questions based on wrong assumptions the result will never be correct.

Following are some of the key issues from an Indian perspective:

39% of the total Telecom towers are going to be in Indian subcontinent.

Our grid supply is in measurable condition and it is not going to improve in next couple 10-15 years as annual demand is increasing much faster than planed capacity.

In rural India grid supply is totally unreliable and in most of the places unavailable.

USO tender phase 2 had made provision of DG sets of 15 to 25 KW at each Telecom tower.

As per Vodafone International CSR report, in 2009, Vodafone's India network was responsible for 69% of carbon footprint created worldwide operations.

The urban mobile Telecom networks are designed for dense urban and high traffic requirements. It cannot be efficiently deployed in sparse rural areas with tough terrain, very low traffic and totally unreliable grid electricity environment. Further very low ARPU and non-availability of trained network maintenance staff.

Converting the existing power guzzler mobile towers in to solar tower will defeat the very purpose of use of solar energy. As per a GSMA study solar system becomes Non viable if the total power requirement at a mobile site becomes more than 1.8 KW.

Sharing of towers does not reduce the power consumption in a big way; rather it increases EM radiation in a phenomenon manner. Further, making more number of service providers to install the BTS on same tower will increase capacity in an area of surplus unused Telecom capacity only.

The solution lies in dividing dense urban and sparse rural country side in two different areas.

In the urban areas operators must be encouraged, through regulatory mechanism, to install new low power BTS for umbrella coverage and use of technologies like in building solution, FMC and DAS etc in phased manner in next 3 years.

For rural areas it is necessary to make mandatory to use only alternate sources of energy for low power pole mounted BTS in each villages and umbrella coverage for a cluster of villages, using low capacity high rise central BTS. Since rural BTS will cater to a village population its power requirement may be optimized to efficiently work with solar power or micro wind mill. Understand such system is available from indigenous sources and then why not to exploit them and make global standard for rural applications.

Following are our comments on the questions raised in the consultation paper:

Carbon Footprint

3.1 How should the carbon footprint of Indian Telecom industry be estimated?

By an independent survey or making it mandatory for Telecom operators and infrastructure providers etc to provide following information to TRAI regularly:-

- A The money spent towards provisioning of electricity on each mobile tower with OPEX and CAPEX every quarter
- B The amount of energy consumed by each tower with breakup of grid and diesel electricity.
- C The amount of Diesel /fuel consumed by them

Above information from all the Telecom operators & Tower companies, will give approximate quantum carbon foot print created by each Telecom in different areas. This will help TRAI to monitor the progress and designing proper regulations to reduce carbon foot print.

3.2 What is your estimate of the carbon foot print of the fixed, mobile and broadband networks?

It is expected that 5-6 leading mobile operators consume about 5500 MW of power every day. About 40% this would be coming from diesel generators.

As per an industry estimate at present Telecom towers consume about 3 billion liters of bio- fuel. This will help TRAI in calculating the carbon foot print. It is estimated that in future the consumption of bio-fuel by Telecom towers will increase to 16 billion liters.

3. In case of mobile what would be the individual footprints of the radio access network and the core network? How are these likely to change with 3G and 4G technologies?

It is true that radio access network consumes more than 90% of power required by any Telecom operator.

3G and 4G networks would require much more power for access network operation. There will be heavy pressure on back haul infrastructure. This will also increase energy requirements.

Carbon Credit Policy

3.4 How should the carbon credit policy for Indian Telecom sector be evolved? What should be the time-frame for implementing such a policy?

There is no need for any special carbon credit policy. Green Telecom should be achieved by licensing and regulatory incentives, levies and penalties.

As a matter of fact no one has right to distort environment for commercial benefit and must be mandated to pay for restoration of the environment right from the beginning.

3.5 What should be the framework for the carbon credit policy?

As above

3.6 What should be the metric to ensure success of the carbon credit policy in reducing the carbon footprint of the Telecom industry?

As above

Availability of Power

3.7 What proportion of tower infrastructure is in rural areas? Please comment on the grid/electricity board power availability to these towers.

TRAI must be having got all such data. How do you expect to get through public consultation?

3.8 To what extent can active sharing reduce the carbon footprint and operational expenses?

It will depend upon the type of sharing allowed. It is not the question of sharing; it is network topology and method of deployment. TRAI must work in this direction seriously.

Domestic Efforts for Reduction of Carbon Footprint

3.9 What proportion of non-grid power supply to towers in rural areas can be anticipated to be through renewable sources of energy in India in the next 5 years?

With the present trend of network deployment I do not expect more than 2%. I am afraid all the money provided will go down the drain in absence of proper regulatory and monitoring mechanism.

3.10 How much saving accrues per tower if supply is through a renewable source instead of diesel for towers that do not get grid power for 12 hours or more?

TRAI is in a better position to get it accessed

3.11 How can migration to renewable sources be expedited?

This is quite simple provided Government has political will and do not come under pressure of corporate lobbyists. Following will facilitate migration to green Telecom:

Promote use of green Telecom in phases. Within three years all the Telecom operators must be mandated to not to use more than 15Kg of carbon per subscriber in VRL. This will enable deployment of low power Telecom systems (like in building solutions, distributed antennas, low power and low capacity umbrella coverage change etc) in urban areas.

For rural areas use of solar/wind energy with maximum radiated power per sector of 5-10 watts must be allowed. This approach will enable green Telecom deployment.

The operators migrating to green Telecom in three years must be rewarded using regulatory mechanism and others must be made to pay for creating carbon foot print. The money so collected must be used as seed money for R&D in green Telecom system development.

3.12 If you are a service provider what steps has your company taken towards use of renewable sources of energy? Have the gains from this move been quantified?

Fortunately, I am not a Telecom operator

Methods for Reducing Carbon Footprint

Metrics for Certification of Product and Services

3.13 What should be the metric for certifying a product green?

It can be divided in three sections:-

- 1 For rural areas, only renewable energy based BTS must be mandated. The system must not use more than 100 watts with radiated power of 10 watts. Such systems must be certified as green
- 2 All the BTS which use less than 700 watts of power for a three sector BTS site should be certified Green.
- 3 Energy consumption of core network must have some direct correlation with the Subscriber numbers. For example it may be dimensioned as 10 watts for 100 subscribers (including all energy system used by the operator).

3.14 Who should be the metric for certifying a network or service as green?

TEC and some other independent organizations of high repute having expertise in the field. Modalities may be worked out once TRAI makes such recommendations and government is in right frame to accept it.

Adoption of Energy Efficient Technologies

3.15 As a manufacturer/service provider have you started producing/using energy efficient Telecom equipment? How is energy efficiency achieved? Please explain.

Understand, such energy efficient systems are being developed by a couple of innovative organizations in India and abroad. The need to is to rework on the standard GSM, CDMA , WiMAX and LTE etc keeping low energy system requirement as basic design consideration.

Since such innovative systems do find it difficult to get deployed due to strong lobby and long term equipment financing by the multinational vendors, it is necessary for Government/ TRAI to take appropriate regulatory measures to provide equal opportunity to such innovative technologies.

In case TRAI/ Government do not such actions, it would be good for us to forget about Green Telecom.

3.16 How does the cost of energy efficient and the normal equipment compare?

There was a study conducted by MDI Gurgaon on the subject. The results of the study clearly depict that such innovative designs are much more economical and sustainable in comparison with conventional telecom deployment topology.

Use of Renewable Energy Technologies

3.17 What are the most promising renewable energy sources for powering Telecom network in India? How can their production and use be encouraged?

Since India is blessed with abundance of Solar Radiation it is the most effective solution. Government is also putting a lot of thrust on manufacturing of solar panels. It is expected in near future such efficient and cost competitive solar system will be available.

Use of solar system for present day energy inefficient BTS should not be encouraged at any cost. The solar energy efficient sites with total power consumption under 2KW for each site must be encouraged using regulatory mechanism.

Infrastructure Sharing

3.18 What is the potential of infrastructure sharing in reduction of energy consumption?

Change regulation and allow many operators to use same BTS on each site.

Waste Management

3.19 What is the current procedure for storing, disposing and recycling Telecom waste by the service providers and manufacturers?

3.20 How can waste management be made more green?

3.21 What steps can be taken by the service providers in planning green networks?

Standardization of Equipment

3.22 What standards do you propose to be followed in Indian Telecom network for reducing the carbon footprint?

3.23 Who should handle the testing and certification of green equipment and networks?

Telecom engineering center (TEC) standard should be the agency for this certification.

Manufacturing Process

3.24 How can manufacturers help in reducing GHG across the complete product life-cycle?

Monitoring and Reporting

3.25 What should be the rating standards for measuring the energy efficiency in Telecom sector?

TEC or other reputed institutions having expertise in this field.

3.26 Please give suggestions on feasibility of having energy audit in the Telecom sector on the lines of energy audit of buildings.

3.27 What should the monitoring mechanism for implementation of green Telecom?

Annual energy audit and heavy penalty for non compliance

3.28 Who should be the monitoring agency?

TEC or other reputed institutions having expertise in this field.

3.29 What type of reports can be mandated and what should be the frequency of such reports?

3.30 What financial and non-financial incentives can be useful in supporting the manufacturers and service providers in reducing the carbon footprint?

For manufacturers:

Promoting R&D and Indian IPR creation for Green Telecom. Supporting Indian innovative companies for deployment of standard and innovative solutions not worse than foreign multinationals (taking into consideration their financial and market dominance) by way of regulatory/ licensing mechanism.

For service providers:

Excellent regulatory Incentive for adopting green telecom systems and heavy dis-incentive to operators who do not adopt green Telecom towards polluting environment

3.31 What R&D efforts are currently underway for energy efficient and renewable energy Telecom equipment?

A lot of initiatives do not surface out in want of proper support for innovation, incubation, entrepreneurship and market access.

3.32 How can domestic R&D and IPR generation be promoted? CSR and Community Service

Let us have separate consultation paper on this subject. It is most neglected activity in the Telecom domain. Our Telecom import bill is next to oil. It is responsibility of TRAI and DoT to not to sleep on this issue any more.

3.33 Would it be a good idea for TRAI to evolve a best practices document through a process of?

Consultation with the stakeholders?.

Requesting for due consideration on the same.

Warm Regards,

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