No. MTNL/CO/RA/Pre CP on Green Telecom/2010
Dated: 9.3.2011

To,
The Principal Advisor (TD)
TRAI, New Delhi.

Subject: Comments on TRAI consultation paper on "Green Telecommunications" dated February 3, 2011.

The present consultation paper is on "**Green Telecom"**. MTNL admires the initiative taken by the regulator i.e. TRAI suo moto to seek comments / views from various stakeholders on various issues involved in making the fastest growing telecom sector more greener so as to induce more sustainable development. Consultation process makes the whole decision making more transparent & democratic and will help the regulator to take a considered decision.

2. The emphasis of the consultation paper is on reducing the overall power consumption in telecom sector thereby reducing the carbon footprint of the telecom Industry. As per our opinion the main culprit in adding more carbon dioxides and other green house gases in the atmosphere is the prolonged/frequent use of DG sets in various telecom establishments due to unavailability of uninterrupted power supply from grid/electricity board. Accordingly, if this problem is sorted out either by providing uninterrupted power supply from the grid or through use of feasible alternative / renewable resources, the carbon footprint in the telecom industry can be minimized to greater extent.

3. This consultation paper covers various broader aspects related to the topic **"Green Telecom"**. As MTNL's presence is limited only within the two metro cities i.e. Delhi and Mumbai with no foot prints in the rural areas, the efforts have been made to reply the queries based on our experience in these markets only. Accordingly, our comments may, at times, be quite generic one. Being operating in two cities and some of the queries seeking specific estimation about the carbon emissions etc. in the context of overall Indian telecom Industry, it is very difficult to estimate the same. Accordingly, general comments are given on the various issues. We hope that our comments/views on various issues would be helpful to the Regulator to take collective and considered decision on various issues.

4. The telecom sector is capital intensive and the fast pace of technological developments lead to faster obsolescence. The competition is intense and call rates are lowest in the world. The operators are providing services with wafer thin margins and generally negative cash flows. The high tax rates make operations even more difficult. It is, therefore, proposed that any additional expenditure by operators in making their operations green in national interest should necessarily be compensated through matching tax rebates.

5. In a nutshell, following comments are offered on the various issues:

Q1: How should the carbon footprint of Indian Telecom Industry be estimated?

Ans. In our opinion, the carbon footprint of Indian telecom Industry can be estimated after considering all the technological deployments in Indian Telecom sector employing different equipments and technologies, old & new. For example; power consumed by equipments deployed in various technologies like Fixed line, Broadband, GSM, 3G, CDMA, WiMax, LTE, etc. may be considered as a whole for accounting carbon footprint of Indian Telecom Industry. The power consumption on various associated equipments, servers, etc. may also be taken into account. In addition to the energy requirement of telecom resources/equipments, the power consumption of various buildings of telecom operators housing its offices, customer service centres etc. may also be added to determine the total requirement. Also the consumption of fossils fuels (diesel/ petrol) on transportation and other activities may also be taken into account.

Q2. What is your estimate of the carbon footprint of the fixed, mobile and broadband networks?

Ans No comment.

Q3. In case of mobile what would be the individual footprint of the Radio Access networks and the core network? How are these likely to change with 3G and 4G technologies ?

Ans. The Radio access network mainly consists of Towers, BTSs, Antennae, BSCs etc. Other associated equipments like power supply unit including DG sets, backhaul access like microwave,/OF connectivity etc. are also there. The individual footprint of Access network may be calculated after taking into consideration the power consumed by each of these equipments. In case of DG sets, the fossil fuel i.e. Diesel consumption may be accounted for. Similarly, the core network consists of MSC, SGSN, GGSN, SMSC, HLR, VLR, other values added service elements etc. The individual carbon footprint of these equipments may be calculated after

taking consideration the power consumed by each of these equipments over the period of time. The newer technologies are generally more energy efficient, however, the added features add to extra energy consumption. In India, the 3G/4G (BWA) spectrum allotted is in higher frequency band (2100/2300/2500 MHz band) when compared to 2G deployments (800/900/1800 MHz bands). Thus, with rollout of 3G and 4G technologies, more networks will be deployed in the country requiring more towers for proper coverage. More equipments will be installed and powered on, more DG sets will be provisioned. Further several new operators will also deploy their networks in the country, who will further increase the carbon emissions.

Q4 How should the carbon credit policy for Indian telecom sector be evolved? What should be the timeframe for implementing such policy?

Ans. After detailed deliberations with Environmental experts / research organizations and other stake holders, suitable policy may be framed by the government. In the policy itself, the adequate level of carbon credit limit should be prescribed for telecom sector. There is a possibility to link the permissible carbon foot prints with the subscriber base of operators. Provisions may be kept for punishing the violator's i.e. organizations emitting more carbon than the prescribed limits or the violators should purchase the carbon credits from others who have extra. At the same time the companies following the norms and meeting the prescribed limits as per policy may be rewarded even by way of allotting extra credits which they can trade in the market. The modalities should be decided after detailed study/discussions with environmental experts/research organizations engaged in this field. Such policy may be implemented at the earliest.

Q5 **What should be the framework for carbon credit policy?**

Ans. Please refer our reply to Q4 above.

Q6. **What should be the metric to ensure success of the carbon credit policy in reducing the carbon footprint of the telecom industry?**

Ans. Various steps to be taken to ensure reduction in power consumption and hence, reducing the carbon footprint . Following are some suggestions:

(i) Use of energy efficient technologies may be promoted.
(ii) Use of alternate source of energy.
(iii) Use of eco-friendly renewable energy sources.
(iv) Stress should be given for efficient power management.

(v) Infrastructure sharing may be mandated. Policy may be framed, according to which certain percentage of the new infrastructure being developed by each operator may be mandated for sharing with other operators. Mandating the sharing of existing infrastructure is not recommended since there may be design constraints as the same might have developed with limited capabilities for own use. In fact, initiatives may be taken to separate the support infrastructure from the core telecom infrastructure at least in case of wireless networks and the same may be defined under a separate license. It may be made mandatory that the support infrastructure by all the telecom operators be taken from such infrastructure provider licensees. Regulatory framework for the same may be created which should make it mandatory for the infrastructure provider to provide resources to all telecom operators who approaches them. The regulatory framework should clearly define the rates/ charges etc.

(vi) Radio Access Network (RAN) sharing by wireless operators.

(vii) Policy may be made for proper disposal of IT / telecom / electronic wastes .

(viii) As 1 Litre of petrol = 2.3 Kg CO2 & 1 Litre Diesel = 2.7 Kgs of CO2, effort should be made to reduce petrol/diesel consumption.

(ix) OEMs should make efforts to produce / develop energy efficient / low power consuming devices.

(x) Star rating should be introduced for telecom equipments also.

Q7. What proportion of tower infrastructure is in rural areas? Please comment on the grid/electricity board power availability to these towers?

Ans. No comments.

Q8. To what extent can active sharing reduce the carbon footprint and operational expenses?

Ans. There are so many mobile operators in each circle. Each operator has erected so many mobile towers in their respective circles. Power consumption has considerably gone up with increase in number of telecom service providers in the country. The various operators have already resorted to passive infrastructure sharing like towers, Battery backup, DG Sets etc., although under sort of unregulated market. Sharing of active components including RAN among various operators is likely to reduce the carbon footprint considerably.

Q9 What proportion of non grid power supply to towers in rural areas can be anticipated to be through renewable energy sources in India in the next 5 years?

Ans. No comments.

Q10 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?

Ans. No data is available.

Q11 How can migration to renewable sources be expedited?

Ans. Proper carbon credit policy as mentioned against Q4 will go a long way. Government may also give subsidy (as already being done in same cases) to telecom operators deploying these renewable energy resources..

Q12 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 be quantified?

Ans. As already mentioned that MTNL is operating in metros cities only where grid power supplies are adequately available, no comprehensive steps have been taken by us towards the use of renewable energy.

Q13. What should be the metric for certifying a product green?

Ans. No comment.

Q14 Who should be the metric for certifying a network or service as green?

Ans. Government appointed agencies may be used for this purpose.

Q15. As a manufacturer /service provider have you started producing/ utilizing energy efficient telecom equipment? How is energy efficiency achieved ? Please explain ?

Ans. Not yet**.**

Q16. How does the cost of energy efficient and the normal equipment be compared?

Ans. No exact comparison is made. However the energy efficient equipments will definitely reduce the power requirement of an operator and thus reduce the OPEX. The energy efficient equipment are costlier that non

efficient equipments. However, in the long run, energy efficient equipment may be cheaper option.

Q17. What are the most promising renewable energy sources for powering telecom network in India? How can their production and use be encouraged?

Ans. Wherever space is not the constraint and no prolonged/ frequent power cuts are observed, in our opinion, the solar power can be the most promising solution. By subsidizing the equipments to manufactures / telecom operators the increased usage can be encouraged. Further, in the coastal areas where adequate wind energy is available, the same should be exploited.

Q18. What is the potential of Infrastructure sharing in reduction of energy consumption?

Ans. There is great potential. It should be encouraged, rather infrastructure sharing should be mandated. Other suggestions are given against replies to Q6 (refer sub paras (v) & (vi).

Q19. What is the current procedure for storing, disposing and recycling waste by the service providers and manufacturers ?

Ans. Waste materials are stored in central locations/ stores/ disposing yard etc. As per government guidelines / company policy, they are disposed /auctioned to licensed scrap vendors/dealers who deals in Electronic/ Telecom/IT wastes. Also efforts are made for buyback/recycling of the equipments with their suppliers.

Q20 How can waste management be made more green?

Ans. By preferring telecom products of those manufacturers who take responsibility for the whole lifetime of their supplied products, engage in sustainable manufacturing and actively pursue the development of telecom products that are energy efficient, recyclable and non toxic. Efforts should be made to proper reusing of these equipments or some part of it. The waste should be stored in such places which are not exposed to general public. Further, the wastes should not be stored for long period and disposed quickly.

Q21. What steps can be taken by the service providers in green networks?

Ans. Please refer our reply at Q6 above.

Q22 What standards do you propose to be followed in India telecom network for reducing the carbon footprint?

Ans. Standardization of green equipment should be done so that same can be taken into consideration along with other parameters like technology, cost etc. while procurement. TRAI reported customer base may be taken into account for allotting carbon credit to any operator. Energy saving Index may be fixed by the government, which may be used to evaluate an operator in terms of its carbon footprint. To start with the standard may be fixed at 10% reduction in the existing power consumption by any operator.

Q23 Who should handle the testing and certification of green equipment and networks?

Ans. Bureau of Energy Efficiency (BEE) or any other agency equipped to do so and appointed by the Government may be given the task of handling testing and certification of green equipments.

Q24. How can manufacturers help in reducing GHG across the complete product life cycle?

Ans. Manufactures can develop energy efficient telecom products. After completion of product life cycle, there may be option of buy back. Some part / component of the product may be reused before disposing the complete product. Product may be also recycled after completion of life cycle.

Q25. What should be the rating standards for measuring the energy efficiency in telecom sector?

Ans. Star rating may be given to products used in telecom sector as well. Customer base linked power consumption limit may be fixed for the operators. Violating operators may be punished and those meeting the limits may be rewarded in terms of reduction in license fee, AGR based charging, taxation relief like custom duty, sales tax etc.

Q26 Please give suggestions on feasibility of having energy audit in the telecom sector on the line of energy audit of buildings?

Ans. Energy audit may be feasible in telecom sector also. In our opinion, to ensure use of power efficient telecom equipments, energy audit may be made mandatory by the authority to be conducted at regular intervals. It may give good results in terms of reduction in power consumption/ carbon footprint of any operator.

Q27. What should be the monitoring mechanism for implementation of green telecom?

Ans. Initially, government may mandate the self certification by the operators for use of energy efficient telecom equipments in its network which should be followed by energy audit by government designated agencies.

Q28 Who should be the monitoring agency ?

Ans. Any government authorized agency.

Q29. What type of reports can be mandated and what should be the frequency of such reports ?

Ans. To start with the report may be collected on half yearly basis, then quarterly and finally on monthly basis.

Q30. What financial and non financial incentives can be useful in supporting the manufacturers and service providers in reducing the carbon footprint?

Ans. Please refer our reply at Q22 above. In addition, the reduction in energy consumed by any operator may be treated as fulfillment of its corporate social responsibility (CSR).

Q31. What R&D efforts are currently underway for energy efficient and renewable energy telecom equipments?

Ans. No comments.

Q32 How can domestic R&D & IPR generation be promoted ?

Ans. No comment**.**

Q33. Would it be a good idea for TRAI to evolve a best practices document through a process of consultation with the stakeholders?

Ans. Yes. Consultation process gives an opportunity to various stakeholders to put their views and voice be heard by the authority and if the best practices document is created by the Regulator, we are sure, it would be acceptable to all stake holders.

(Mukta Goel)
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