

Counter Comments

On

TRAI Consultation Paper

On

Approach towards Sustainable Telecommunications
(Consultation Paper No: 02/2017)

Back Ground and Overview:-

Telecommunication industry in India work on an unsustainable business model consuming approx. 3.5 lakh litre diesel per annum. Following the international examples, TRAI initiated the consultation on Green Telecommunications in February 2011 under the dynamic leadership of Late Dr. J.S. Sarma then Chairman of TRAI. Dr. Sarma actively propagated the idea of Green Telecommunications. TRAI released the "Recommendations on Approach to Green Telecommunications on 12 th April 2011. The recommendations were accepted by Department of Telecommunications with some minor modifications. Department of Telecommunications issued the directive to telecom service providers (TSPs) on 4.01.2012.

The salient features of the directive are as follows:-

1. 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.
2. At least 50% of all rural towers and 20% of the urban towers are to be

Powered by hybrid power (Renewable Energy Technologies (RET) + Grid power) by 2015,

From the day one, telecom industry has stiffly opposed and defied the directive. No carbon emission report was submitted to TRAI till Nov. 2013 despite of several reminders. Finally, TRAI was forced to issue direction under section 13 of TRAI Act , (TRAI F No. 815-3/2012-TD Dated 18.11.2013).

As the TRAI did not have the mechanism to check the authenticity of submitted reports, there was room for manipulative, fabricated carbon emission reports. For example TSP- 11 claimed to reduce it's per subscriber carbon emission from 45.79 Kg to 10.80 Kg (76.4%) in the span of 5 years. The some other abnormal items of carbon emission reports are as follows:-

S. No.	Name of the Service Provider	April 2011 to March 2012		April 2015 to March 2016		Comments Percentage Change from 2011 to 2016
		Carbon Emission Per Subscriber (in Kg)	Carbon Emission Per Unique User (in Kg)	Carbon Emission Per Subscriber (in Kg)	Carbon Emission Per Unique User (in Kg)	
1.	TSP- 3	41.58	64.86	45.44	72.20	Increase 9.28%
2.	TSP-7	22.45	44.28	11.29	22.12	Decrease 49.71%
3	TSP-8	24.63	37.20	13.60	22.36	Decrease 44.77%
4.	TSP-9	20.83	28.19	23.18	33.18	Increase 11.28%
5.	TSP -11	45.79	72.02	10.80	16.74	Decrease 76.41%
6.	TSP-12	21.21	24.57	11.43	17.94	Decrease 46.11%

(Source: TRAI Consultation Paper - Page 52)

Indian Telecom industry generally argues that carbon emission of telecom sector is fraction of other sectors like transport etc. The carbon emission is usually under reported; there is no auditing /third party verification. Researchers at UPES Dehradun and IITM (CSIR) Pune found the telecom industry as a big polluter and in view of increasing data use and expansion of mobile services, it surely has an increasing trend .Moreover, our country has to cut the carbon emissions by 35% by 2030Based on above back ground, following key points explain industry's abhorrence to the green telecom sector:-

Summary

1. Indian telecom industry follows an unsustainable business model relying on diesel generators. The industry is not ready to mend its ways.
2. India has committed to cut its carbon emissions by 30-35% by 2030.For achieving this target every sector is important. Though the contribution of ICT sector in India's GHG inventory is small, but it can be reduced further by technological measures.
3. TRAI recommendations on Green Telecommunications was result of farsightedness and efforts of Late Dr. J S Sarma ex TRAI Chairman .
4. National Telecom Policy 2012 envisages the use of renewable energy specially the solar energy in telecom sector.
5. Telecom Companies tried to stall and defy the DoT directive on Green Telecom
6. No serious effort was made to achieve Renewable energy targets as per DoT directive.
7. There was no verification mechanism or third party verification of carbon reports of TSPs.
8. No Indian telecom company declare its use of fossil fuel and scope 1 , 2 emissions under Carbon Disclosure Project (CDP) or GRI.
9. Progress on energy efficiency and Green Passport is unknown.
10. Suitability of RET installations have been proved by MNRE and DoT .Renewable energy solution is techno commercially viable with support from USO fund, foreign agencies like ADB etc. Recalibration of RET targets at this juncture will set wrong precedence and a blow to sustainability.

Methodology for calculation of Carbon footprint

3.1. Accuracy level for collection of the data

Carbon Foot printing is a tool for management of emissions. Having quantified the emissions, opportunities for reduction can be identified and prioritized, focusing on the areas of greatest savings potential. Foot printing is necessary for accurate reporting to a third party. The accuracy of the footprint relies on correct data.

Based on comment of stake holders the following is suggested:-

- The TSPs can provide accurate data based on diesel and electricity bills only for the sites that are owned and operated by them.
- In cases, where they are tenants on a shared site, the IP-1s, who own and operate the passive telecom infrastructure so that they provide their direct emissions data (Scope 1 and 2 emissions) to the TRAI and TSP.
- The TSP has to include its own direct emissions data (Scope 1 and 2 emissions) as well as scope 3 emissions based on carbon foot print data provided by infrastructure providers.

3.2 Need for auditing the carbon footprint of a telecom network by a third party auditor

Various industry associations and TSP has opposed the third party verification due to well known reasons. In absence of third party auditing there will be no authenticity of footprint declaration and whole exercise will become a farce like the earlier submitted carbon print reports. In TRAI consultation paper TSP-11 has claimed 76.4 % carbon footprint reduction

from 2011 to 2016. In absence of third party verification there will be more such claims. TERM Cell should be entrusted monitoring of carbon emissions. Carbon emission report or its key features should be available in public domain like QoS index.

3.3. Approach for calculating the carbon footprint

New Formulae for calculation of Carbon footprint of Telecom network

1. The existing formulae for calculation of Carbon footprints from Grid
2. The emission factors calculation of Carbon footprints from Grid
3. Suitable formula for calculation of Carbon footprints from Grid supply

Prof. Rangan Banerjee, IIT Mumbai , Integral University and other stake holders have suggested to consider emission factor of grid weighted by net generation .It is to consider the factor based on the T&D losses - since we would be measuring only the grid electricity supplied to the telecom network. Since T&D losses vary from state to state (telecom licensing area), an average 20% T&D loss can be considered. Hence the EF would be $0.82 \times 1.20 = 0.984 \text{ kg/kWh}$

4. Suitable Formula to be used for the calculation of carbon footprints from the Diesel generator

As suggested by Prof . Banerjee, Integral University and others , EPA formula $C_{DG} = 0.0027 \text{ tCO}_2/\text{liter}$ should be used .

5. Option for calculating average carbon foot print

I support approach suggested by Prof. Banerjee of IITM for benchmarking the energy use and CO2 emissions based on output (activity level). Traffic Exabytes could be used as a proxy for output.

Energy efficiency in Telecom networks

1. Renewable energy solutions for to power the telecom sector

Renewable Energy targets for Telecom networks

- 1. Justification on the approach suggested by the DoT committee.**
- 2. Support to industry for effective implementation of RET/Energy efficient solutions in telecom sector.**
- 3. New Renewable energy targets in the telecom sector**

As per approach suggested by the DoT committee, foremost requirement is GIS mapping of telecom towers and establishment of a web based Centralized Energy monitoring system .

In view of comments of stake holders, the emphasis should be on making the sites diesel free. It can also be achieved by using nickel cadmium and other advanced batteries. As per comment of ex chairman RERC, the renewable energy can be generated at a suitable centralized location and can be extended to cluster of BTS in nearby area. Incentives can be extended to industry to use renewable energy or carry out own installation. These incentives may be in form of subsidy, easy loan, support from USO fund and further rebate in license fee.

- Industry should be motivated to invest in RET for tower and community in remote areas as a CSR measure and the extra generation can be supplied to electricity distributors.
- State run BSNL and MTNL have enough space for solar roof top installation, they can be motivated to generate electricity if it is subtracted from their overall carbon emission. The extra generation can be supplied to electricity distribution companies.
- There should be reporting of actual electricity and diesel consumption by different network components for TSPs and IPs. TSPs should declare their energy mix (share of renewable energy). Web based Centralized Energy monitoring system as suggested by DoT committee should be in place soon.
- A third party annual report of the energy performance of the telecom sector should be published

Concluding Remarks

The onus of greening the telecom sector lie with TRAI and DoT, if they fail to fulfill this historical responsibility, NGT or Courts have to intervene.

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