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Comments on Consultation Paper

On

Approach towards Sustainable Telecommunications

(Consultation Paper No: 02/2017)

Methodology for calculation of Carbon footprint

3.1. What accuracy level may be set for collecting the data and also, what should be the basis for arriving at this threshold level? Please comment with justification.

Comments:

For calculation of carbon footprints following information are required

- Number of units of electricity consumed by telecom equipment from grid power supply.
- Amount of fuel consumed in DG sets.

Telecom service level area wise electricity unit consumption is available with telecom service providers; it can further be verified from the electricity bills / electricity distribution company of the area. The electricity and fuel used for the administrative offices /billing units is also included in it. An assumption (say 10 percent) is to be made to segregate this from actual energy consumption of the telecom equipments. The point of consideration is that whether diesel used by the vehicles of telecom companies is to be included where the telecom company has its own fleet of vehicles.

The data should be communicated accurately by the telecom companies as per the record of energy expenditure in their balance sheet.

3.2. Is there a need for auditing the carbon footprint of a telecom network by a third party auditor? If yes what is the mechanism proposed? Please comment with justification.

Comments:

Yes, third party audit should be mandatory for the purpose of transparency and public trust in the process. The third party auditors have to verify/certify the carbon footprint declared by the service providers based on theoretical energy consumption, historical records etc. In absence of the third party audit the whole exercise will become futile just like the previous carbon emission reports available with TRAI. The third party certified carbon foot print reports should be put in public domain, concealing the name of the service providers. The report should contain

- Methodology.
- Boundary conditions which were set and types of emissions included and excluded.
- Data collection techniques, including level of accuracy achieved and any assumptions or estimations that were required.
- Level of verification of the results provided by independent third party.

3.3. Do you agree with the given approach for calculating the carbon footprint? If not, then please comment with justification. New Formulae for calculation of Carbon footprint of Telecom network

Comments:

No. The proposed detailed approach for calculation of carbon foot print of telecom network has been explained in 3.6 and 3.7.

3.4. Whether the existing formulae for calculation of Carbon footprints from Grid (given in paras 1.16, 1.17 and 1.1.8) of Chapter I need to be modified? If so, please comment with justification.

Comments:

The existing formula needs to be modified. The proposed detailed approach for calculation of carbon foot print of telecom network has been explained in 3.6 and 3.7.

3.5. Which emission factors as mentioned in Table 1.2 of Chapter I need to be used for the calculation (Average/OM/BM/CM)? Is there any other factor(s) needs to be considered in the calculation? Please comment with justification.

Comments:

The average emission factor is the average emission of all stations in the grid, weighted by net generation. The net generation includes generation from renewable energy sources and hydroelectric sources.

As the fossil fuel use for telecom networks is to be replaced with solar/wind/fuel cell etc. It is better to use CM (Combined Margin) that is a weighted average of the OM and BM (Weighted as 75:25) based on CDM methodology AMS IA and AMS I F for estimating carbon emission of telecom networks.

3.6. Is the formula mentioned in para 1.22 of Chapter I suitable for calculation of Carbon footprints from Grid supply? Please comment with justification.

Comments:

Carbon Footprints from Grid supply in a telecom service level area =Grid Electricity Consumption by telecom equipments of the telecom service level area (in MWh)* Emission factor of the grid serving the location (MWh/ t CO₂)

If the emission factor of the grid is 'EF' (in tonnes of CO₂e/MWh),consumption of power from the grid by the telecom network is 'A MWh' per year, then the carbon footprint per year due to grid power is calculated as: CGRIDPOWER= (EF * A) tonnes of CO₂ per year

The carbon footprint of grid electricity is caused by the burning of fossil fuel at the generating station level, therefore average technical grid losses (transmission and distribution) for the year for the grid serving the telecom service level area are a significant contributor. For example transmission and distribution losses for Bihar and J&K are 42 and 46 percent.

Therefore, Carbon Footprints of grid electricity per annum at generating station level = Yearly Carbon Footprints from Grid supply in a telecom service level area/ (1-T&D losses of the grid serving the telecom area (expressed as fraction))

3.7. Which of the formula, (i) or (ii) as given in para 1.23. of Chapter I is to be used for the calculation of carbon footprints from the Diesel generator along with views on possible values of .Please comment with justification.

Comments:

Carbon footprints from the Diesel generator = Diesel Consumed by the generators *Emission Factor of diesel

The record of diesel purchased by the telecom operator is available. It can be taken as diesel consumed by the telecom operator. Alternatively, based on running hours, generators capacity and average diesel consumption, diesel consumption can be determined.

The emission factor due to diesel consumption in diesel generator given by United States' Environmental Protection Agency (EPA 2005) is 0.0027 tCO₂/liter.

3.8. For calculation of average carbon footprint, which of the options mentioned in para 1.25 of Chapter I is to be used? Please comment with justification.

Comments:

Considering International norms, OPTION 3: Averaging across total amount of traffic carried is to be used as it provides correct basis for comparison of carbon emission of telecom service providers.

Energy efficiency in Telecom networks

3.9. What are the options available for renewable energy solutions which may be harnessed to their maximum potential to power the telecom sector? Please comment with justification. Renewable Energy targets for Telecom networks.

Comments:

GIS mapping (Longitude and latitude mapping) of all BTS sites is required. The renewable energy options in the table 1 can be harnessed as per site conditions.

Table 1: Fuel Switching Options for BTS Sites in India

Sl. No.	Fuel Switching Option	Capital Cost in Rs.(Lakh)	Pay Back Period in Years (Diesel cost@Rs. 60/)
1	Solar Photovoltaic (SPV) Solution 8kW Solar Panel with Batteries	16	3.63
2	Wind Turbine Generator WTG 10kW with Batteries	14.32	3.64
3	Biomass Gasifier 10kW	10.18	2.32
4	Hydrogen Fuel Cell 4kW	10.68	3.08

3.10. If electricity generated by a RET project (funded/ maintained by TSP) is also used for community, should it be subtracted from overall carbon emission of a TSP? Please comment with justification.

Comments:

Yes, the electricity generated by a RET project (funded/ maintained by TSP) is also used for community, should it be subtracted from overall carbon emission of a TSP. The proposal will encourage the funding of renewable energy project by the telecom service providers.

3.11. If the RET project is funded/ maintained by other agency, should that emission be counted? Please comment with justification.

Comments:

The emission should not be subtracted for the RET project funded/ maintained by other agency as the agency funding the RET project can claim carbon credits under CDM mechanism

3.12. Please comment with justification on the approach suggested by the DoT committee.

Comments:

The approach suggested by the DoT committee is advisory in nature. There is no mention of targets. GIS mapping of the telecom site has not been undertaken. The monitoring mechanism suggested by the DoT committee should be put in to place with out further delay.

3.13. For effective implementation of RET/Energy efficient solutions in telecom sector, how can the industry be supported? Should incentives be provided to licensees (TSPs)? If yes, what should be the milestone? Please comment with justification.

Comments:

Support can be provided as suggested by the DoT committee under MNRE schemes and Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

3.14. What methodology can be proposed for setting new Renewable energy targets in the telecom sector? What should be the timeframe for achieving these targets? Please comment with justification

Comments:

The road map is missing in consultation paper. To fulfill the objectives of NTP-2012 (National Telecom Policy) and sustainability in telecommunication sector, 100% of rural towers and 50%

of urban towers should be hybrid powered by 2020. Necessary financial incentives should provided to telecom service providers to achieve the year wise targets.

(C S Azad)