



Vodafone's Response to TRAI Consultation Paper on Approach towards Sustainable Telecommunications

Summary

1. Reduction in carbon emission is a challenge for the world, and one where the mobile telecommunications industry is making a great contribution through innovative use of mobile technology. The share of ICT itself in the total carbon footprint is minimal - TRAI records ICT sector worldwide being responsible only for 2% of the global GHG emissions and only 0.7% of the global CO₂ emissions; of this, the mobile sector is an even smaller fraction. Further, India's share in the global ICT footprint is negligible at 0.38%. As a responsible company, we are taking all steps to reduce the carbon emission and the results can be seen from the respective reports filed with the Authority. However, there is a lack of overall practically implementable alternate solutions from the technological and the ecosystem perspective.
2. Efforts for reduction of carbon footprint in India is more needed in the key sectors that cause maximum carbon emissions viz. power and heat generation sector and manufacturing sector, which predominantly rely on fossil-fuel based energy (especially coal and oil).
3. It is imperative that any carbon footprint reduction targets fixed for the telecom sector should be aligned to the targets fixed by the Government for Power/energy sector and be applied on a proportional basis.
4. Further, the telecom infrastructure providers (IP-1s) and telecom equipment suppliers especially end-user based device manufacturers need to be included in the ambit of telecom carbon footprint reduction initiatives/targets.
5. The operation of vital telecommunications infrastructure/ networks necessitates use of electrical power and the Government, through the Ministry of Power, must ensure provision of the same through affordable and environment friendly power generation options that facilitate the reduction of carbon footprint. Today, telecom operators are forced to use the electrical power generated by the combustion of fossil fuels, and are additionally compelled to use diesel generators due to non-provision of sustained electrical power supply by the Power Grid networks.
6. Renewable energy options have their own set of limitations in deployment which need to be recognized. Given the practical and implementation constraints, there should be no prescriptive approach recommended for RET.
7. Telecom Sector is one of the major contributors towards savings on carbon emission. Mobile telephony together with Internet has resulted in more options for faster and secured transactions without need for travel/commuting. Initiatives like M2M, IoT, m-pesa and other mobile transactions bring the services through telecommunications to the door of the customers and result



in higher efficiencies and more savings. Some key telecommunication areas that result in potential emissions abatements and associated energy cost savings are:

- a. Dematerialisation (i.e. replacing physical goods, processes or travel with 'virtual' alternatives, such as video-conferencing or online shopping);
- b. Smart grid/ Smart meter i.e. improving efficiency of electricity grids through active monitoring and reducing reliance on centralised electricity production and grid loading optimisation;
- c. Smart logistics and Onboard telematics i.e. monitoring and tracking vehicles and their loads to improve the efficiency of logistics operations by utilising vehicles more fully; data from vehicle sensors are used to plan predictive maintenance and encourage fuel-efficient driving;
- d. Smart cities – improving traffic and utilities management;
- e. Smart manufacturing – synchronising manufacturing operations and incorporating communication modules in manufactured products.

Our detailed submissions are as under:

Issue-wise Response:

Methodology for calculation of Carbon footprint

Q1. 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.

- a. The TRAI notes that the accuracy of the footprint relies on correct data with respect to
 - Amount of fuel consumed in DG sets.
 - Running hours of the telecom equipment.
 - Number of units of electricity consumed by telecom equipment from grid power supply.
- b. The TRAI is also aware that the given the widespread prevalence of infrastructure sharing, the owners of this data are, in most cases, the Infrastructure providers and not the TSPs.
- c. The TSPs can provide accurate data based on diesel and electricity bills only for the sites that are owned and operated by them.
- d. In cases, where they are tenants on a shared site, it is important that the IP-1s, who own and operate the passive telecom infrastructure are included into the framework so that they provide their Direct emissions data to the Authority.
- e. It is not possible for telecom operators to obtain this data from IP-1s, as most IP-1s charge telecom operators on a consolidated energy consumption basis and do not provide actual diesel or electricity consumption break-up for commercial and practical feasibility reasons.



- f. It is submitted that if the data is collected directly from the site owners, then the question of setting an accuracy level for the data does not arise.

Q.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.

- a. We submit that auditing the carbon footprint of a telecom network can only be done if the mechanism is based on actual verifiable consumption.

Q.3. Do you agree with the given approach for calculating the carbon footprint? If not, then please comment with justification.

- a. We submit that the methodology should be simple and transparently known to all.
- b. The calculations should ideally cover direct emissions from diesel consumption only.
- c. The data collection should be based on actual consumption provided by the respective site owners.
- d. Auditing is possible only in case of actual verifiable data.
- e. Further the reporting should be on an annual basis – instead of the current bi-annual submissions.

Q.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.

- a. As submitted above, ideally, the carbon footprint should be calculated based on direct emissions from diesel consumption only.
- b. In the event that the carbon footprint from the Grid is included in the calculations, we submit that the current formula is based on assumptions; it needs to be modified to reflect actual consumption.
- c. We also submit that given the increased take up of data, the averaging may be done basis the total amount of traffic carried by the network.

Q.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.

- a. In the event that the carbon footprint from the Grid is included in the calculations, we submit that the emission factor in the existing formula may be modified and the average emission factor given in Table 1.2 may be used as modified by the Central Electricity Board from time to time.



Q.6. Is the formula mentioned in para 1.22 of Chapter I suitable for calculation of Carbonfootprints from Grid supply? Please comment with justification.

- a. In the event that the carbon footprint from the Grid is included in the calculations, we support the following formula proposed by TRAI viz.

$$\text{CGRIDPOWER} = (\text{EF} * \text{A}) \text{ tonnes of CO}_2\text{e per year}$$

Where

EF is the emission factor of the grid (in tonnes of CO₂e/MWh) and

A is the consumption of power from the grid by the telecom network

Q.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.

- a. We support a formula based on the diesel consumption of the DG set, viz.

$$\text{C}_{\text{DGSET_A}} = 0.002629 * \text{N} \text{ tonnes of CO}_2\text{e per year}$$

Where

“N” is the total Diesel consumption of the diesel generator in litres in a year.

Q.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.

- a. We support averaging across total amount of traffic carried.

Q.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.

- a. As per a study conducted by PWC in 2014, there are several technical, commercial feasibility issues in the deployment of RET. The PWC study analyzed actual data provided by the stakeholders to conclude that :

i) Out of the total of **5.85 lakh telecom towers in the country, 59,000 towers were found to be technically feasible** for RET implementation.

ii) From this technically feasible universe, **31,000 telecom towers were estimated to be commercially feasible** for RET implementation. Total upfront **capital investment** for these towers estimated to be close to **INR 1328 Crores**.



- iii) **Rest of the universe that is technically feasible** (remaining 28,000 towers) **would require additional government support** of INR 513 Crores over the initial capital investment of INR 884 Crores for RET conversion.
- b. It may also be noted that the pilots carried out by BSNL were with support from the USOF and MNRE. The RET Report records BSNL as stating that 100 of its pilots were with 90% subsidy from the MNRE.
- c. It is evident from the above that there are severe technical, commercial challenges in the deployment of RET solutions. In view of the same, we earnestly submit that there should be no prescriptive approach recommended for deployment of any RET solutions and same be left to the operators to decide based of technical and commercial feasibility and practical implementation.
- d. A copy of the PWC Report on Technical & Financial feasibility report for review of RET and carbon footprint dated May 2014 is enclosed as Annexure-1.

Q.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.

- a. As submitted above, due to severe practical and implementation constraints, there should be no prescriptive approach recommended for deployment of any RET solutions.
- b. However, in the event that any TSP chooses to fund /maintain a RET project that generates electricity, then, irrespective of whether the electricity generated is used for the community or any other purpose, it can be counted towards the carbon reduction efforts of the said TSP.

Q.11. If the RET project is funded/ maintained by other agency, should that emission be counted? Please comment with justification.

- a. We believe that in such cases where TSPs are the end users of the RET project which is funded/maintained by another Agency, then the corresponding emission reduction due to this should be given to the TSP.

Q.12. Please comment with justification on the approach suggested by the DoT committee.

- a. It is first submitted that the Committee's recommendation for recalibration of the DoT Directives is an acknowledgment of the infeasibility of the said directives. Having recommended a recalibration and an alignment with international practices, we believe that the TRAI should approach this issue in a wider manner without pegging the consultation to the approach suggested by the DoT Committee.



- b. The deployment of RET admittedly comes with several constraints and hence no prescriptive approach should be advocated with regard to RET deployments.
- c. Energy efficient solutions should be encouraged through reductions in taxes and duties. Fuel subsidies from the USO fund may be considered to encourage green initiatives. Reductions in license fee may be considered for achieving any defined objectives to incentivize operators.
- d. The Industry should be allowed to voluntarily deploy various solutions for the reduction of carbon footprint and hence no targets should be enforced on the Industry.
- e. Approach should be self – regulation and self – monitoring instead of monitoring through TERM cells/centralized monitoring system.
- f. In case any target has to be prescribed, then reduction in the carbon abatement/Carbon Intensity should be the only target for the Telecom industry. This may be as per the formula based on actual consumption, as suggested.
- g. It should be left to the operators to decide on the enablers/methods for achieving the targets.

Q.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.

Q.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.

- a. It is reiterated that there should not be any prescriptive approach recommended for deployment of any RET/Energy efficient solutions in the telecom sector.
- b. As pointed out there are several technical, commercial and feasibility issues in the deployment of RET.
- c. The TRAI may however recommend an incentive based approach which may include lower taxes and duties on Energy efficient products /solutions, introduction of a fuel subsidy from the USO Fund, etc.

New Delhi
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