

**Idea Cellular's Response to  
TRAI Consultation Paper  
On  
Approach towards Sustainable Telecommunications  
Released on January 16, 2017**

**Preamble:**

At the outset, it is submitted that we appreciate the Authority's initiative to heighten the focus of the Indian Telecom Industry on issues related to climate change and thereby make its contribution to the global movement in that direction.

Indian telecom currently has over a Billion consumers connected on voice telephony, a revolution that has been made possible by a very competitive industry that has built large scale telecom networks through innovative business models, supported by clarity in regulatory framework, large investments by TSPs, ability to attract investment, amongst others. This has spurred innovation and customization of solutions in the market.

**In fact all the benefits that can come from effective regulation, such as economic and technological growth, increased investment in the sector, cost reduction with improved efficiency, better quality of service, improved customer satisfaction, affordable prices delivering better value for money and improved access and availability of services, have got delivered under the prevailing Light touch regulatory regime of TRAI.**

**With that background, our summary comments on the consultation are as under:**

**A. Indian Wireless Industry though has the finest infrastructure still suffers from power woes:**

The Authority would appreciate that the Indian wireless industry, especially the private sector, over the last two decades, has perhaps built the finest and widest services infrastructure in form of a mobile voice highway which today connects over 5 lac towns and villages across 550 districts including deep rural interiors and hinterlands across Bharat. This infrastructure, entailing investments of over Rs. 8.5 lac crores, is the backbone that delivers high quality voice services to over 1 billion Indians today, catapulting India to the 2nd largest mobility country in the world in terms of number of mobile users, and generating over 10 billion voice minutes on a daily basis. The sector is a vital driver of the country's GDP and has contributed nearly 3% directly to the economy over the last decade.

However, it is also a known reality that one of the biggest challenges faced by Telecom Sector is the deficiency of uninterrupted power. Unlike many other developed markets, Indian TSPs do not have access to continuous availability of electricity from the Grid. Therefore, in order to support seamless telecom services, the Telecom Industry is forced to use Diesel Generator sets (DG sets) at Network sites in addition to other storage devices like batteries.

**B. Use of Diesel has been inescapable:**

It is relevant to note that the power situation is erratic not only in rural areas but even in some urban areas. As a result, though diesel is an expensive fuel, that entails high costs for both carriage and storage and is thus the last option for any TSP, the current reality of lack of continued availability of electricity from the Grid (Electricity Board or E.B power) does not allow TSPs the flexibility to give up on its use. Wherever possible, rechargeable batteries are preferred. But since the use of rechargeable batteries too is to a large extent dependent on electricity supply from the grid, which unfortunately is inadequate and erratic, most often, companies have no other choice but to depend on diesel supply in order to keep offering uninterrupted service to their consumers

**C. Use of RET is still to take off for various reasons**

It is well acknowledged that at this present point in time there are severe technical, and commercial challenges in the deployment of RET solutions.

All the studies undertaken since the publication of Green Telecom directives by TRAI, dated 12<sup>th</sup> April 2011 showed that there is limited scope of RET deployment at Sites. The Final draft report of PWC, jointly engaged by DoT and the Industry, also substantiates that the RET deployment options at Telecom Sites are very limited to achieve any meaningful levels of RET based power generation. There is no significant change in any of the conditions in terms of Technology, Solutions or Eco-System which can significantly alter the facts and other parameters evaluated by the experts in this domain which finally led to the conclusion above.

Options based on Renewable energy technology have not taken off in a substantial manner. Some of the reasons are:

- a. High and incremental capex involved as most solutions need to be installed in addition to DG.
- b. Technical and commercial feasibility for most of the RET solutions is low.

**'In view of the above technical, commercial feasibility issues in the deployment of RET, we would like to submit that it is critical that no regulatory mandates are issued as regards the implementation of RET, and the same is left to the business and commercial feasibility of the operators. Further, the overall approach on carbon emissions reduction and RET deployments should be to allow TSPs to self-regulate and self-monitor.**

**D. For effective implementation of RET/Energy efficient solutions in telecom sector, the industry needs to be supported**

**We feel that there is a need for the TRAI to do a separate Consultation on this critical issue. The same would enable the Industry and the Government to work together and usher in changes that are required to give an effective push to the green initiatives.**

Having that said, some of the preliminary recommendations from our side are as follows:

- We are of the view that Regulatory changes are required in the Open Access regulations to increase RET deployment capacity exponentially. For a consumer to have a Power Purchase Agreements with any Power Producer, the current Open Access regulation specifies the following:
  - Connected load more than 1 MW
  - Single Consumer Number

Due to these conditions, only those consumers who are able to meet the above criteria are able to enter PPA with Power Producers. In view of the same, following are our recommendations:

- Permit aggregation of Loads of Telecom Sites as these Sites are belonging to the same consumer and connected to a single network. For example, if 2000 Sites of a TSP/IP with an average connected load per Site @ 15 KW is aggregated the Total value is 30 MW. Huge Capacity Solar/Wind generation can be created against this consumption through Power Purchase Agreements.
- Eliminate the Connected load condition of single consumer number from 1 MW.

A regulation change as mentioned above combined with an option to offset the Carbon Emission of Telecom Network from RET based Energy procurement through PPA's is likely to result in a substantial increase in the RET based Power Generating Plant Capacity across India.

**Basis the above, we now proceed to respond to the queries raised in the consultation paper.**

- 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.**

**Idea Submission:**

At the outset, it is submitted that in today's scenario, the Telecom Passive Infrastructure is owned and operated by Infrastructure Providers. For the Services extended by them, Service charges are paid to them as Infrastructure Provisioning Fees.

The Cost of Energy is paid back to them based on either of the following models -Fixed Energy Model (FEM) or reimbursement of actual expenses. In both the cases, the OPCO do not have the access to the actual consumption of Energy at the Site, in terms of Grid Supply in kWh and Diesel consumption in litres.

Hence, the current practice is to derive Grid consumption in kWh and Diesel consumption in litres using the invoice values and the prevailing tariff rates of Electricity and Diesel. For the same, the Tariff information is taken from the published data of respective Electricity Distribution companies and Oil Marketing Companies.

**Considering the above facts, we believe that that the derived value of Electricity and Diesel consumption are fairly accurate. We thus recommend that this model can be considered for calculating the Energy Consumption in kWh and Diesel Consumption in liters for further establishing the Carbon Footprint Calculations.**

**Further, since the figures used are already audited financial figures, we feel that there is no need to set any threshold limits; instead guidelines can be issued to use the accounted / booked financial values for Energy as the basis for deriving Carbon Footprint Calculations for the network.**

- 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.**

**Idea Submission:**

As already submitted, in the current scenario, the consumption of Grid Power in kWh and diesel consumption in liters are derived using the invoice values and the prevailing tariff rates of Electricity and Diesel.

**These statistics are thus derived from auditable sources and can be used for calculation of carbon footprint. Since standardized sources are already being used for deriving usage of Grid Power and Diesel consumption, we feel there is no need for any third party audit.**

Further, it is pertinent to mention here that the operators have already been reporting many other network related parameters to the TRAI for which no prior third party verifications are required to be carried out. We feel that the TSPs have been properly discharging their responsibility of sharing authentic data with the Regulator and hence there is no reason why an external agency is required to be enrolled to carry out verification of submitted figures.

- 3. Do you agree with the approach for calculating the carbon footprint? If so, please comment with justification.**

**Idea Submission:**

The approach as defined in the CP involves the following:

- a. Define the Methodology.
- b. Specify the boundary and scope of coverage.
- c. Collect the emission data and calculate the footprint.
- d. Verify the results.
- e. Disclose the footprint.

**While we are broadly in agreement with the above approach, as submitted above, we do not support the need for any third party verification of the carbon footprint results for the reasons mentioned already.**

Further, we feel that the information on Carbon Footprint can be submitted from our side to the TRAI as per the agreed methodology and formats, and **any further dissemination / sharing**

of the information to the Public can be carried out by the TRAI from its respective end in whatever manner or fashion it feels would be appropriate for the public.

4. Whether the existing formulae for calculation of Carbon footprints from Grid (given in paras 1.16, 1.17 and 1.18) need to be modified? If so, please comment with justification.

**Idea Submission:**

The existing formula for calculation of carbon footprint from Grid is as given below:

$CGRIDPOWER = 0.365(0.84 * P * X)$  in tonnes per year,

Where,

P = Power consumption in kWh

X = Average hrs with grid supply per day

At the outset, we would like to submit that **ideally the calculation methodology for Carbon Footprint should only include diesel consumption and exclude carbon emissions by the grid. as the same does not fall under the control of the TSPs.** This would also be in sync with the Authority's own line of thinking followed in the CP where it has excluded or neglected the carbon emissions from that part of the network value chain where TSPs have little or no control.

Based on the current practice, all operators are reporting their Carbon Footprint for Grid as per the formula given in Para 1.17 that requires Site-wise information on connected load, in kW and Grid availability in hours. However, as submitted under our response to Q1, site wise information is not available as a result of which any exercise of such nature becomes challenging. **We find that, the proposed formula in this Paper as given in clause 1.22, is more scientific compared to the earlier formula, as the Grid power consumption is directly derived from two verifiable data points, the invoice values and tariff card.**

However, should TRAI decide to continue with the existing formula for the sake of maintaining continuity with the past practice, we request that the same may be suitably modified to include the average Emission factor of electricity grids ( 0.82 currently in tonnes CO<sub>2</sub>e/ MWh) as against the currently assumed grid emission factor of 0.84. This would enable calibration of carbon emission footprints to more realistic levels

5. Which emission factors as mentioned in Table 1.2 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

**Idea Submission:**

It is submitted that usage of “average” would be best suitable for calculation of emission factor as it is the weighted average of net generation of all the Stations. It is justified in our view as there is no other Emission Factor we have come across for calculating emissions factor for Grid Power.

- 6. Is the formula mentioned in para 1.22 suitable for calculation of Carbon footprints from Grid supply? Please comment with justification.**

**Idea Submission:**

It is submitted that the formula mentioned at para 1.2. of the Consultation Document -  $C_{GRIDPOWER} = (EF * A)$  tonnes of CO<sub>2</sub>e per year - is most suitable for calculation of Carbon footprints from Grid supply.

This is because in this formula “EF” is a constant factor and “A” (MWh) is a figure derived from two auditable information sources, the invoice values and tariff card which enables the **derived value of Electricity to be fairly accurate**.

It is also understood that moving forward, the power sector would be introducing more energy efficient technologies for power generation with the intent to reduce their contribution to GHG emission and thus the Grid Emission Factor would only improve/ reduce over a period of time.

Further, it is recommended that the Telecom Regulator carry out an annual notification / review of the EF in line with the baseline data obtained from the Central Electricity Board as that would facilitate inclusion of the same in operator calculations of the Carbon Footprint.

- 7. Which of the formulas, (i) or (ii), in para 1.23 is to be used for the calculation of carbon footprints from the Diesel generator along with views on possible values of  $\Psi$  and  $\eta$ ? Please comment with justification.**

**Idea Submission:**

In our considered view, the best method for calculation of carbon footprints from the Diesel generator is as per the formula mentioned in para 1.23 (i), i.e. calculation based on Diesel consumption;

**$CDGSET\_A = 0.002629 * N$  tonnes of CO<sub>2</sub>e per year**

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

In this formula, the parameter required to calculate the carbon footprints from the Diesel Generators is the total diesel consumption in litres, which is a figure derived from two sources, the invoice values and tariff card.

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

**Idea Submission:**

It is submitted that keeping in view the increased uptake of data in recent times, out of the three Options mentioned in the CP, the Option 3 – “Averaging across total amount of traffic carried”- can be adopted for being more relevant to the current times.

- 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.**

**Idea Submission:**

At the outset, it is submitted that the Authority needs to consider that neither the Telecom operators (TSP) nor the IP-1s have the expertise and core competencies necessary to take up a specialized activity such as renewable energy generation.

Having said that, in our view, the most feasible RET solutions for Telecom Sites are Solar Hybrid Solutions that need to be encouraged through enabling policies finalized in consultation with all the stakeholders. However, it also needs to be noted that the Solar Hybrid Solutions too have various technical limitations that do not allow them to be able to provide a full-fledged RET solution for any Site.

**Different RET Solutions and their limitations are as listed below:**

1. Solar Hybrid Solutions: –
  - a. Solar Availability is limited to 5-6 Hrs. a day,
  - b. Huge Space is required for Solar Panel deployment (10 Sqm/kW)
  - c. Most Telecom Sites are shared Sites with higher connected load and hence high Solar generating capacities are required for battery recharging and site operations. However, sites generally do not have adequate space to accommodate large capacity solar plants.
  
2. Fuel Cells: – There are 2 kinds of Fuel cells that have been tried and tested at Telecom Sites - Hydrogen Fuel Cells and Methanol based Fuel Cells. Following are the observations:
  - a. Availability of Hydrogen is limited and Hydrogen logistics is costly. Same is the case with Methanol too.
  - b. Fuel Cells are not available in India. They need to be imported which makes it a costly affair.

c. There is no service support system currently available for Fuel Cells.

Due to the above-mentioned reasons, large scale deployment of Fuel Cells is not a viable option.

3. **Biomass:** – Biomass is not a viable option as technically feasible commercial solutions are limited. Whatever solutions are available, they are mostly location-specific. Hence large scale deployments of Biomass are not possible.

**In view of the above technical, commercial feasibility issues in the deployment of RET, we would like to submit that it is critical that no regulatory mandates are issued as regards the implementation of RET, and the same is left to the business and commercial feasibility of the operators.**

Further, we feel that there is an urgent need for a consultation around carrying out regulatory amendments in Open Access domain to increase RET deployment capacity exponentially as the present regulations are restrictive and not conducive for creating RET based Generation plants against Energy consumption of Telecom Networks.

- 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.**

**Idea Submission:**

It is well acknowledged that at this present point in time there are severe technical, and commercial challenges in the deployment of RET solutions.

All the studies undertaken since the publication of Green Telecom directives by TRAI, dated 12<sup>th</sup> April 2011 showed that there is limited scope of RET deployment at Sites. The Final draft report of PWC, jointly engaged by DoT and the Industry, also substantiates that the RET deployment options at Telecom Sites are very limited to achieve any meaningful levels of RET based power generation. There is no significant change in any of the conditions in terms of Technology, Solutions or Eco-System which can significantly alter the facts and other parameters evaluated by the experts in this domain which finally led to the conclusion above.

**Hence, should a TSP take the initiative to deploy a RET project on his account (including funded/maintained), the Electricity generated from the same, irrespective of the fact that it is used for community or any other purpose, should be subtracted from the overall Carbon Footprint calculation of the TSP.**

This is because the said RET plant got built and operated because of the concerned TSP and would not otherwise be existing. Hence, due credit for emission reduction due to this Plant needs to go to the TSP.



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

**Idea Submission:**

It is submitted that If the RET Project is funded/maintained by other agency and TSP is the end user of the plant fully or partially, then the corresponding emission reduction due to this Plant should be given to the TSP.

**Thus the Carbon Footprint of the TSP should be established after offsetting the Energy Consumptions for their Network Operations, against the Carbon Abatement initiatives.**

- 12. Please comment with justification on the approach Suggested by the DoT committee?**

**Idea Submission:**

At the outset, it is submitted that the Committee's recommendation for recalibration of the DoT Directives is an acknowledgment of the need to review the earlier Directives and look at the issues afresh. **We request the TRAI to carry out a separate Consultation on the issue of Green Initiatives / RET so that the various pertinent aspects can be looked at holistically and a way forward decided on the same.**

It is also reiterated that no RET deployments be mandated and the same be left to the commercial viability as per the TSPs business plans.

Further, the overall approach on carbon emissions reduction and RET deployments should be to allow TSPs to self-regulate and self-monitor.

Reductions in taxes and duties, Fuel subsidies from the USO and reduction in license fees should be looked at in order to encourage deployment of energy efficient solutions.

- 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.**

**Idea Submission:**

**At the outset, as submitted earlier, we feel that there is a need for the TRAI to do a separate Consultation on this critical issue. The same would enable the Industry and the Government to work together and usher in changes that are required to give an effective push to the green initiatives.**

Having that said, some of the preliminary recommendations from our side are as follows:

- We are of the view that Regulatory changes are required in the Open Access regulations to increase RET deployment capacity exponentially. For a consumer to have a Power Purchase Agreements with any Power Producer, the current Open Access regulation specifies the following:
  - Connected load more than 1 MW
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Due to these conditions, only those consumers who are able to meet the above criteria are able to enter PPA with Power Producers. In view of the same, following are our recommendations:

- Permit aggregation of Loads of Telecom Sites as these Sites are belonging to the same consumer and connected to a single network. For example, if 2000 Sites of a TSP/IP with an average connected load per Site @ 15 KW is aggregated the Total value is 30 MW. Huge Capacity Solar/Wind generation can be created against this consumption through Power Purchase Agreements.
- Eliminate the Connected load condition of single consumer number from 1 MW.

A regulation change as mentioned above combined with an option to offset the Carbon Emission of Telecom Network from RET based Energy procurement through PPA's is likely to result in a substantial increase in the RET based Power Generating Plant Capacity across India.

**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.**

**Idea Submission:**

As submitted earlier, no RET deployments should be mandated and the same be left to the commercial viability as per the TSPs business plans.

Further, the overall approach on carbon emissions reduction and RET deployments should be to allow TSPs to self-regulate and self-monitor.

Reductions in taxes and duties, Fuel subsidies from the USO and reduction in license fees are some of the options that need to be explored in order to encourage deployment of energy efficient solutions.

**Finally, as submitted earlier, a fresh Consultation on the issue of RET and Green initiatives should be separately carried out with all stakeholders to usher in fresh changes in the regulatory environment. Post such deliberations only, should there be any consideration of setting up new Renewable Energy targets to build MW Capacity RET based generating Power Plants**

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