Green Telecom- Necessity For Telecom Infra Providers

Over the last couple of years, we have seen what an important role convergence of two disciplines takes place. Till now, we had only paid heed to convergence of things in its technical sense of the word, but in my view; convergence of nature and technology is ultimately what is needed because there is an indispensable balance that needs to exist between Nature & Technology; One cannot survive without the other. That is the key predicament that we're facing today and with that thought in mind – we have arrived at the juncture where Technology is extending consideration towards Environment.

Climate change is ultimately a very real threat and India's participation in the Conference of Parties (COP26) & Paris Climate Agreement (UNFCCC) has virtually recognized this threat. So, moving ahead in tune with global focus on climate change, it was imperative for us to undertake measures that would facilitate not just protection or preservation of our current environment, but it's also important to leave behind sustainable resources for our next generations. So, in order to tackle the predicament of dissuading climate change ills and maintaining steadfast growth in technology, Green Telecom is our answer to this predicament.

- Over the last decade alone, India has seen a meteoric growth of the telecommunications sector. Within a decade we have switched two generations of network and are on track to welcome the 5th iteration of the Next Generation Mobile Network i.e., 5G. At present, the Indian Telecom Sector has more than ~7 Lakh Mobile Towers, and 23 Lakh Base Transceiver Stations (BTS). With proliferation of internet services across not just Urban areas but even Rural ones, the OFC backhaul rollout reached ~30.6 Lakh Kilometres this year. All this infrastructure currently supports our beloved 1.15 billion subscribers which tantamount to our 86% tele-density making India the second largest Telecom Market in the world.

- However, being such a magnanimous industry, it is imperative for us to take cognizance of the carbon footprint that the industry has. From a global standpoint, the ICT industry has a miniscule share of 1.4% in Carbon Footprint. On a country level, ICT contributes 9 to 10% of Carbon Footprint, which is significantly large and now, warrants a strong call to reduce the same.

- On a policy level, the government launched some key initiatives which ultimately beset right within the approach of Green Telecom:

o National Energy Policy by NITI Aayog: which encouraged the development of storage technologies using Li-ion and outlined the immense potential of Renewable Energy Service Companies (RESCOs) as they can provide for the requisite capital, technology, and maintenance of Renewable Energy Technologies (RETs)

o Green Energy Open Access: Open Access Transaction has been reduced from 1 MW to 100 kW for green energy, to enable small consumers also to purchase renewable power through open access.

o National Digital Communications Policy 2018: The policy encourages the Digital Communications Sector to promote alternative energy sources vis-à-vis utilizing fuel cells, Li-ion batteries, and undertake R&D initiatives for exploration of more such energy sources

- In 2017, The TRAI had recommended that RET adaption should be made voluntary basis the feasibility and viability of the RET considered for deployment; Further, mandates towards Carbon Credit policy and, recognition of RET deployment being counted as savings from overall carbon emission,

- Additionally, TRAI recognized lithium ion (Li-ion) battery as the next generation storage technology; detailing that in comparison to Valve Regulated Lead Acid (VRLA) batteries, the Li-ion battery offered better battery life, low maintenance, higher charging speed and higher energy density.
- As a result of the TRAI recommendations made in consultation with various industry bodies, The DoT announced revised voluntary measures for sustainable telecom which established voluntary nature of RET targets, Carbon emission reduction of up to 40% by end of 2022, mandatory reporting on carbon footprint per user, and Carbon Credit Policy mandating 50% (Rural) & 66% (Urban) carbon footprint reduction.
- Taking into account the perspective and initiatives shown by the government towards the recent push towards promotion of EVs & supporting infrastructure, harnessing Green Hydrogen for industrial & commercial use, and extensive Energy Storage Systems (ESSs), the telecom industry must be ready for the next wave of collaboration – as all these initiatives will bear the fruit and become intertwined with real life applications within Telecom Sector
- From a Global perspective, at the Conference of Parties (COP26), India has committed to achieve 500GW of its installed capacity through non-fossil fuel and 50% of its energy requirements through RETs; Further, the Hon'ble Prime Minister rallied the rest of the G7 countries to support India's efforts in combating climate change by achieving climate neutrality by 2050 and achieving the 2030 agenda meanwhile
- Going green has become a necessity for Telecom operators with energy cost becoming as large as approx. 30% of the OPEX. With increase in the price of diesel and environmental concern about Green House Gas Emissions, the government authorities are fast making provisions for non-conventional energy, solar & wind power in both remote off grid sites as well as grid sites
- Energy consumption is directly linked to an operator's greenhouse gas emissions. Besides, considering the impact of the value chain on resources like land and water become vital. Therefore, clear, stringent sustainability criteria, and eco design of products also needs to be considered while procuring the requisite telecom equipment; which is where concepts like circular economy and life cycle assessment come into picture.
- The infrastructure industry has already taken a wide array of initiatives & measures towards Green Telecom:
o A significant feat achieved by the Infrastructure Providers (IPs) is that they have successfully transitioned 1.86 Lakh Tower Sites into Diesel Free sites. Ergo, 40% of the India's sites are now considered "Green Towers" as they burn less than 100 litres of diesel in a week, thereby cumulating a saving of 334 Mn litres of Diesel annually
o 60% of all tower sites have been converted from Indoor to Outdoor; as Outdoor sites have natural ventilation and collectively utilise Free Cooling Units, they no longer require Air Conditioning (AC) units for maintaining safe-operation temperatures
o The initiative for using CNG/PNG instead of Diesel fuel for existing DGs successfully eliminates use of Diesel as primary fuel source. Thereby, ensuring a significant reduction in Carbon Footprint
o The industry is shifting towards complete usage of Lithium Ion Batteries instead of Lead Acid (VLRA) batteries which have extended battery life and higher energy yield
o Imbibing & using the Renewable Energy Service Company (RESCO) model, which essentially supplies green energy to tower clusters and surplus/excess power is supplied to the community
- Other industry level initiatives undertaken are:

o Next Generation Mobile Networks (NGMN) Alliance recommended integration of circular economy principles and life-cycle assessment methods into the procurement process of all mobile network operators and equipment manufacturers.

o Standards have been developed through global consultation at the International Telecommunication Union (ITU) provide directions to the Telecom Network Providers on the way forward. These include standards from the ITU's standardization arm (ITU-T). These standards define methodology for assessment of environmental lifecycle of ICT goods, networks, and services – Further, they highlight the best practices for charting Greenhouse gas emissions trajectories in ICT in line with UNFCCC Paris Agreement

• To conclude, it is our responsibility to leave behind a sustainable & healthy environment for the next generations. Green Telecom, is a step in the right direction towards fulfilment of this responsibility. The unnerving resolve shown by the industry and the authorities alike, to fulfil the vision of a Carbon Efficient India is second to none. With the collective synergy at the pith, India can emerge as a global leader and torchbearer for Green Initiatives in Technology through Green Telecommunications.