



Expert Speak

DIPANKAR GHOSH

Partner for Climate Change & Sustainability Services, Ernst & Young



Solar power is undoubtedly the most viable form of energy among all the alternatives available though it has cost issues. The solar power generation cost becomes high when it is done on small scale. However, it is possible to bring down the generation cost if the generation takes place at megawatt level.

M.R. BHARATH

President Operations, GTL Infrastructure Ltd



Today the ecosystem is not ready for such kind of a challenge but the telecom industry has taken a very positive step, they have started the solar installations where by the carbon footprint has been reduced, they have also gone one step ahead in reducing the power consumption, like sizing of the batteries, free cooling and the other technological advancements that have taken place, these are some positive steps that the telecom industry has been taking.

P SAIRAM PRASAD

Chief Technology Officer and Head of Operations, Bharti Infratel Limited



We are encouraging the renewable energy service companies to set up renewable energy generating plant of any kind to cater to all the tower companies located in the vicinity on 24x7 bases. Along with this, they are also free to serve other consumers. We would like to guarantee to the demand they require for making their revenues sustainable for longer period of time.



From the left

Paromita Chatterjee, Senior Editor, ET NOW; Dipankar Ghosh, Partner for Climate Change & Sustainability Services, Ernst & Young; P Sairam Prasad, Chief Technology Officer and Head of Operations, Bharti Infratel Limited and M.R. Bharath, President Operations, GTL Infrastructure Ltd

Powering India's Telecom Revolution

With TRAI mandating a shift to hybrid power, India's telecom behemoths are grappling to find the right answers. Yet, there is still some way to go, and many brave initiatives to take to successfully drive the adoption of renewable energy in India

Last month, India was witness to one of the worst blackouts in 11 years. The failure of the northern power grid has only brought the issue of India's unreliable and erratic power supply to the fore. Given such power paucity, it is clear that a unified approach is required to shoulder responsible use of power and reduce carbon footprint. Traditionally, the telecom industry, especially in the hinterlands, has been reliant on diesel generators (DGs). Statistics reveal that 60% of approximately 4 lakh telecom towers in India draw power from DGs, utilising about 2 billion litres of fuel a year, and making towers among the largest consumers of diesel in India. Extensive use of diesel invariably leads to carbon emissions, making the telecom sector account for over 2% of India's total greenhouse gas emissions.

Given the significance of controlling diesel consumption for limiting pollution in the telecom sector, Telecom Regulatory Authority of India (TRAI) has mandated 50% rural towers and 20% urban towers to shift to hybrid power by 2015. Moreover, 75% of rural towers and 33% of urban towers are to turn to hybrid power by 2020. These developments are estimated to reduce carbon emissions by as much as 5 million tonnes and save around \$1.5 billion in OPEX for tower companies. In pursuance of this mission, the TRAI has advised tower companies to create their own emission reduction targets. While telcos have started working with alternate energy sources, effective adoption has remained a challenge. Given this backdrop, coordinated efforts from all stakeholders have become the need of the day in order to achieve the targets set by Department of Telecommunications (DoT).

In a bid to dispel more clarity on these issues, ET Intelligence Group (ETIG), the research arm of The Economic Times, along with Global Group conducted a Knowledge

Forum, 'Green Telephony for Healthier Future'. Moderated by Damini Kumari, Senior Editor, ET Now, the forum aimed at providing a prolific platform for knowledge dissemination by focusing on issues such as challenges of switching from diesel to hybrid or alternate energy sources; operation and maintenance concerns, means for driving green initiatives procuring alternate en-

ergy sources and the action plan for the future. The forum also provided insights on the role played by the government in supporting the efforts of telecom companies in saving the environment.

POWER SCENARIO IN THE TELECOM INDUSTRY

To begin the session, P Sairam Prasad, Chief Technology Officer and Head of Operations, Bharti Infratel Ltd, summed up the scenario, "While some parts of India like South and West have a fairly good power supply, the Northern and Eastern regions have an unreliable grid. That makes the situation difficult when you require 24 hours power supply. So when you don't have grid power at a telecom site, you depend on batteries and DGs. The problem with that is it increases the cost of operations because grid power is much cheaper and does not require operations and maintenance."

Providing direction to the discussion, M.R. Bharath, President Operations, GTL Infrastructure Ltd, pointed out that the alternatives in renewable energy are solar, wind energy or bio mass but they pose challenges. The scale of production in their power generation has not reached the required peak. The CapEx involved in putting

up this infrastructure is still not affordable. "Telecom sites have not been prepared in line with the need to install solar panels, and the like, so space is a constraint. For wind, there are very few locations with adequate wind quality to meet requirements. The farm resources required in case of biomass energy requires 365 days availability. So an undeveloped ecosystem is a challenge," he said. Despite this, the telecom industry has made substantial efforts by way of setting up solar installations; reducing power consumption at towers; leveraging free cooling units in shelters to reduce air conditioning and by shifting to outdoor BTS.

THE COST INHIBITIONS AROUND SOLAR POWER

Opining on the prohibitive cost of solar power, Mr. Bharath said, "In addition to the high CapEx of installing a solar plant, the operation and maintenance of panels is a challenge in itself. Because of the spread of telecom sites, you need to have a team dedicated for panel upkeep. Panels must be kept dust free and needs cleaning more or less on a weekly basis. In addition, security is another concern with respect to vandalism and theft. Vested interests need to be taken into confidence and made partners in such activities for successful implementation."

Mr. Prasad added that solar power, to the extent of its application in towers, depends on energy storage. "While other sources like biomass are fuel cells and do not actually depend on a battery bank because they can run 24x7 and are sized primarily for application. The problem with storage is that it is an additional cost over and above the cost of the solar panel. Additionally, some loss

takes place when discharging a battery, so this adds to the cost of a unit of power produced and becomes difficult to justify," he stated. However there is some hope. When Jawaharlal Nehru National Solar Mission was announced initially, procurement cost was around Rs 12. Mr. Ghosh stated, "The issue is not solar generation cost, but economies of scale. Solar power can become very feasible provided we have grid connectivity in remote locations."

THE FINAL WORD

There is a consensus that solar power emerges as the most effective power source for tower electrification. The expectation is that over the next few years, solar generation cost is expected to reduce substantially; but as Mr. Ghosh mulls, it is like a chicken and egg situation. "If the demand and manufacturing of solar panel increases, costs come down; and at the same time, adoption will happen only when costs decrease. With incentives for solar generation, propagation of solar technology may increase and eventually, we should have some cost parity between clean power and fossil fuel power." Articulating the pivotal role of the government in bringing about this transformation in the telecom sector, Mr. Bharath pointed out that despite having surplus power, Gujarat has taken a significant stride in solar power by installing a 1 megawatt solar power plant on a canal. Such initiatives, subsidies and support from the Centre and state governments will finally benefit the end user.



Catch the coverage of the ETIG Knowledge Forum on ET NOW on August 25, 2012 at 5:30 pm and repeat telecast on August 26, 2012 at 5:00 pm.

A Mission to Transform

On discussing the way forward for the telecom industry in making its shift from diesel generators to hybrid power, the panel threw up some profound revelations, praise-worthy achievements and tangible models of transformation

The mandate is absolutely clear and the telecom industry is already oriented towards green energy. Tower operators are doing their bit towards bagging their Green Passport and trying to make their operations efficient and healthier by reducing carbon emission and electricity consumption. Several industry stakeholders have set out on their missions; yet, policy support could go a long way to help them succeed.

There are several options; yet, each has its own drawbacks. Dipankar

Ghosh, Partner for Climate Change & Sustainability Services, Ernst & Young clarified, "In hilly regions, a micro hydro again would do well, but this would of course not be feasible unless it works under a group generation model—the kind of scheme where you know a part of the power goes to nearby villages and some to the tower—that would possibly be feasible. In coastal regions, wind could possibly be a good option; while in areas where a cattle population and bio mass is available, small bio-gas generating units could possibly be feasible."

In urban areas, which are already connected with grid power, gas-based generation can be considered in a bid to reduce carbon footprint, because most cities have a plentiful supply of compressed natural gas.

INDUSTRY INITIATIVES

Various initiatives to go green are being taken by the telecom industry in the area of leveraging energy efficient and renewable energy solutions. According to M.R. Bharath, President Operations, GTL Infrastructure Ltd, "There are very

The Requisites for a 'Green' Revolution in Telecom

Reducing carbon footprint is a multidisciplinary domain where telecom companies must consider reducing power consumption of equipments as a matter of efficient equipment deployment. For instance, there is already a scheme to get the Bureau of Energy Efficiency to label equipment with a 'star rating', while TRAI is mulling the creation of a 'green passport' for telecom equipment. With respect to renewable energy, the Ministry of New and Renewable Energy (MNRE) should be

working out the options for incentivising RESCOs such that they can set up generation centres in remote rural areas and effectively supply power to tower companies. Another area worth exploring is the renewable energy scheme called Renewable Energy Certificate (REC) scheme in India. Today, renewable energy generators can have these renewable energy certificates which are upgradable, and effectively reduce the cost of power generation. Presently, this is applicable only to generators deal-

ing with more than 250 kilowatt and Central Electricity Regulatory Commission decides how to apply the scheme. So if the Commission considers extending Renewable Energy Certificates (RECs) to smaller generators, it can provide a huge incentive for small renewable energy generating units. Therefore, there is a need to look at several such options with respect to crafting policy incentives that can actually help the propagation of renewable energy in the field of mobile communication.

The Potential of RESCOs

Today, Renewable Energy Supply Company (RESCO) models are being tried out in several parts of the country. According to Ghosh, it has two-fold advantages; first, the RESCO can scale up power generation slightly. After supplying power to the towers, the rest can be used in nearby villages. "Solar or any renewable energy is not feasible on a standalone basis, if you want to power an individual tower." However, Prasad pointed out an important oversight in the RESCO model. "The only problem in the community model is that towers need 24x7 power supply. Community power plants generate power only in the hours the community requires it. So part of the industry initiative is to encourage RESCOs to cater to all the tower companies in the vicinity on a 24x7 basis, while guaranteeing demand required to make their revenues sustainable over a period of time," he said. The industry has taken this initiative through Tower and Infrastructure Providers Association (TAIPA) and has received a good response. Ghosh informed, "The TRAI directive has also talked about a kind of carbon credit scheme. We should devise the scheme within the telecom industry, a kind of crediting scheme which could incentivise those who would be taking initiatives to reducing greenhouse gas emission or energy consumption, similar to the 'Perform Achieve and Trade' scheme," operating in the energy intensive industries such as fertilizer, iron, steel and so on."

few locations where quality wind power can be generated to meet the requirements of telecom. Installing of solar panels require much space. And as telecom sites have not been developed in line with this requirement space becomes a major constraint. Using renewable energy resources as an alternative is a challenge by itself but the industry is taking steps from its own standards to ensure that the consumption is reduced."

Speaking from his experience of wind power implementations in Jammu and Kashmir and Orissa, P. Sairam Prasad, Chief Technology Officer and Head of Operations, Bharti Infratel Limited elucidated, that the problem was more to do with the availability of wind speed in a particular location throughout the year and the ability to predict that because insufficient wind data is available today to the extent it is

required. The panel believed that the industry needs that data to predict how many units it can generate from wind-mills, if they are installed in a particular location. In the southern and western parts of the country, wind strength is higher than in the North and East. Such nuances can affect companies' plans in setting up infrastructure for renewable energy.

SUMMING UP

Despite all these developments, immense support is sought from the government as well; this includes encouragement to stakeholders in the power industry like RESCOs so that they can serve the telecom industry better and also develop into organisations whose core competencies can be in making micro-grids successful. In turn, with increased efficiency, RESCOs will be able to get higher scales of generation, re-

duce prices, reach a larger population of the country, multiply and serve the demand situation. The telecom industry is requesting the Government to provide assistance to RESCOs rather than to the industry directly. It is important to note that whether it is RESCOs or telecom companies setting up energy infrastructure, there is a general need for financial assistance. At this point in time, telecom companies are finding it extremely difficult to justify a business case for renewable energy utilisation.

The aim to cut down carbon emissions to 7 kilos per subscriber as opposed to the present 21 kilos and the deadline to make the change to hybrid is inching close. Although one cannot be certain if the industry would make it there by 2015 or 2020, the discussions have uncovered that the industry is certainly on the right path.