



POWER WOES

Growth Interrupted

Robust plans of telcos for rural expansion are mired by the severe shortage of electricity in rural India

In the past few years, the enormous growth in mobile services has been restricted largely to urban India. But today, the scene has changed completely. "Go rural" is the latest buzz in the telecom circle, making rural India a popular destination for telcos, infrastructure providers, VAS players and vendors. However, even with a foolproof action plan in place, the major challenge for them lies in providing connectivity at af-

fordable prices to those in rural and remote areas.

India might have gained the status of the country with the fastest growing telecom industry, but there are major impediments that have to be overcome by industry stakeholders. Basic issues like low literacy, shortage of spectrum, energy and fuel crisis in rural India are not being addressed, and today, these issues have become some of the biggest challenges for

infrastructure service providers.

Long power outages result in increased operating expenses of telecom companies. There are around 80,000 villages in India without electricity, and in villages that are already wired, power supply continues to be erratic. The current per capita power consumption is about 612 kwh per year while the world average is 2,596 kwh. So when it comes to setting up infrastructure in rural areas, the operators and infrastructure companies are having a tough time. Uniform electrification of rural India and setting up infrastructure towers is an uphill task for both the government and private players and the recent global fuel and energy crisis may stoke this power crisis.

Hampering Growth

Rural areas present a large untapped market for mobile operators to build coverage and connectivity. The rural market is characteristically different from the urban and semi-urban market, which poses new sets of challenges for operators and infrastructure providers setting up infrastructure in remote locations. While in some areas geographical barriers are problem, the other major problem but the lack of power—all this when capex in rural areas is already high.

Tower sites in rural areas are distinctly different from the urban. Normally, urban sites are constructed on rooftops in densely populated areas. These urban rooftop sites require 9 to 18 meter high towers. However, in rural areas the towers need to be constructed higher, which means a higher capex.

"Power and energy scarcity is a major challenge while setting up towers in rural areas. Moreover, it's an obstruction during the construction phase, as this leaves us dependant on alternative sources like gensets which adds to our input cost," says Probal Ghosal, CEO, Quippo Telecom Infrastructure.

Shortage in power and energy availability is hampering expansion plans and has become a bottleneck to

strong infrastructure. Due to the lack of regular power supply in rural areas, cost of bridging electricity boards at the site is high, diesel sourcing outlets are limited and operational cost of the site is high, as most of the time the site is running on gensets.

Prakash Ranjalkar, COO, GTL Infrastructure says, "It is an undisputed fact that better power and road infrastructure will help in rapid deployment of telecommunications infrastructure in the hinterland."

"Longer waiting period and feasibility of grid power is difficult to ascertain before site readiness; frequent and longer outages of grid power; and accessibility in water-logged areas, especially during monsoons, are some common problems while expanding in rural areas," he adds.

A growing population and increasing demands for electricity by the rapidly growing industry sector is widening the gap between demand and distribution of power further. This has led to a severe power crisis in rural India. Power companies and state electricity boards are unable to provide electricity for more than a few hours in a day in rural areas. Therefore, the process and cost of rolling out telecom sites becomes prohibitively long and high. Moreover, due to regular outages, sites require running of DG sets for several hours. Electrical energy from DG costs more than double the cost of electricity board power.

Ajay Madan, CEO, Essar Telecom Infrastructure says, "Yes, power and fuel crisis are major issues. The electricity board takes a long time to connect sites to the grid. We have had to install two DG sets to provide power on a 24x7 basis. The energy bill for the operator also increases, as running on diesel is costly. In addition, the O&M cost also increases, as diesel filling needs to be more often and DGs need more frequent maintenance."

The Savior

Wireless last mile infrastructure can have a positive impact on the eco-



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—Prakash Ranjalkar, COO, GTL Infrastructure

nomics and social development of the rural areas in the country. Seventy percent of India's population lives in rural areas that are underdeveloped in terms of infrastructure. Inadequacies in generation, transmission and distribution as well as theft and inefficient use of electricity restricts availability of power.

Deepinder Bedi, deputy director, Tulip Telecom points to a solution to the power problem: "As we all are aware of fact that power outages in the rural areas are very common and affect business operations, there is a need for sophisticated R&D for producing bio-fuels from renewable energy sources like agriculture residues. These bio-fuels can easily power the existing gensets."

Avoid Fuel Crisis

The fuel crisis has opened a plethora of concerns all over the world. And, India being the second largest populated country in the world, the situation is even grimmer. To safeguard their interest, telecom infrastructure companies are working to adopt various measures to safeguard their interests. For instance, GTL Infrastructure is putting in a



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lot of effort to ensure uptime even in the most challenging conditions. At present, the company is testing energy management solutions to improve the overall efficiency, which includes: identification of energy efficient air-conditioning system with high EFR (energy efficient ratio); free cooling/emergency free cooling concept of air-conditioning systems to utilize cool ambient temperature for reducing compressor running; wide input voltage range SMPS for better efficiency even at lower input voltages; fuel optimizer method of operating DG interleaved with battery back-up; and usage of energy star-rated products.

To monitor site parameters, GTL has created dedicated national network operation centers, which will bring in operational efficiencies. The company has also deployed dedicated O&M teams in each circle.

Telecom operators and infrastructure providers are exploring non-conventional and renewable alternative energy sources like wind power, solar energy, and bio-fuel for running infrastructure sites.

Quippo Telecom Infrastructure has employed several measures such



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—Ajay Madan, CEO, Essar Telecom Infrastructure

as: higher capacity battery banks for increased back up hours; optimized use of electricity boards and diesel gensets through automation at sites; use of solar and wind hybrid as alternate source of energy; implementation of diesel saving technology like fuel savers; and installation of wide-band static voltage stabilizers to maximize use of electricity board at the tower site.

Essar Telecom is working out a hybrid of solar and wind energy solutions. For reducing the need for frequent diesel filling, large storage tanks are being installed with special pilfer-proof caps.

Tulip will be rolling out solar installation soon, as the company is on a "Go Green" mission. They aim to reduce the use of diesel generators substantially in the near future. Tulip also provides connectivity using multiple wireless technologies for access in the rural areas. Its solutions are IP-based using wireless technology to deliver high quality of voice, data and video. The company has also tried to address power challenges using high-grade, spike-proof power interfaces and ruggedized radio equipments. A majority of their wireless PoPs in the rural areas have uptimes in excess of 99%.



"The rural potential is certainly an area of prospects with its untapped market and increasing traffic"

—Probal Ghosal, CEO, Quippo Telecom Infrastructure

Major Demands

Ghosal of Quippo Telecom Infrastructure says, "With an aim to provide strong infrastructure for telecom operators, we place certain demands on high importance. Some of our distinguished demands are use of low power consumption base transceiver station, and government guidelines directing the state electricity board for prioritizing availability of electricity board to telecom sites, and at subsidized rates."

On the measures that need to be taken Ranjalkar of GTL Infrastructure says, "Proactive support of electricity companies to provide power connections for tower sites, simplified processes of approval from municipalities/gram panchayats and uniform guidelines in all states for levies/fees are some measures that will have a positive impact on growth of rural communications."

"The rural tower sites should be subsidized by the government and also active infrastructure sharing should be allowed," says Ajay Madan of Essar Telecom Infrastructure.

For any project to be successful, it is very important that the government works closely with the corporate sector and with the agencies working at the grassroot level. While

the corporate sector can provide the necessary technological and managerial support, the organizations working at the ground level can create the necessary trust in such utilities among people.

Bedi of Tulip Telecom adds, "Although we have been able to address power concerns using innovative techniques, stable power availability will allow us to further increase the pace and reach of our endeavor."

Future Plans

In spite of the huge energy crisis, Infrastructure and power companies are very aggressive about rural expansion. At present, GTL Infrastructure is operational in 18 telecom circles with a total of 7,000 towers. Approximately 75% of these are in rural areas and 5% of them are in most rural (USO) locations. The company has a vision of creating 23,000 towers by 2011 and 60-65% of these will be rural sites covering 50,000 villages.

Quippo Telecom has 1,854 rural sites, and it foresees demand and expansion in various areas like rollout of sites for IP business also.

The company expects substantial rise in the number of site rollouts by partnering with existing and newly licensed operators, as the present rural teledensity of 9% is a huge opportunity. Quippo is also expecting incentivized schemes by the government to compensate tenancy if it is less than three. This can be a deviation to USOF subsidies.

Considering the robust plans for the future, it seems that telcos, and infrastructure and power companies are committed and are working vigorously to explore and expand their network reach to far-flung areas. But the power and fuel crisis is coming in the way of a successful rollout.

Trai encouraging infrastructure sharing, could help greatly reduce the pressure on power and infrastructure companies, helping them to deal with the power and fuel crisis.

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