

Telecommunication Sector: Briefing Paper

Mobile and Internet usage, to name a few ICT technologies and innovation, have resulted in a global transformation in the way we communicate.

In the last two decades the Indian Telecom Sector and mobile telephony in particular has caught the imagination of India by revolutionizing the way we communicate, share information; and through its staggering growth helped millions stay connected. This growth, however, has and continues to be at the cost of the Climate, powered by an unsustainable and inefficient model of energy generation and usage. Simultaneously, this growth has also come at significant and growing loss to the state exchequer, raising fundamental questions on the future business and operation model of the Telecom sector.

Key Indicators	
Tele-Density	51% (By 2012)
Existing Network Towers	Over 3,00,000
Proposed Expansion by 2015	5,00,000
Number of Subscriber	Over 700 million
Expected growth by 2013	1 billion
Growth Rate	45% CAGR
Gross Revenue	INR 1580 billion
FDI Investment	US\$ 345.28 billion
Annual Carbon Emissions	13 million tonnes
Annual Electricity Demand	14 billion KWH
Annual Diesel Consumption	2 billion litres
Annual Diesel Subsidy	INR 14 billion

With its immense contribution to India's growth over the last two decades and projections of continued growth, the telecommunication sector is well placed to decouple its continued growth from continued reliance on fossil fuels, diesel in particular, to a business model which relies on energy efficiency measures in combination with harnessing clean energy sources for its operations.

An Exponential Growth:

The Indian telecommunications industry is one of the fastest growing in the world and India is projected to become the second largest telecom market globally by 2011-2012 with a gross revenue exceeding INR 1580 Billion and a growth rate of 45% CAGR¹. To put this growth into perspective, the country's cellular base witnessed close to 50 per cent growth in 2008, with an average 9.5 million customers added every month. Telecom companies expect this pace of growth to continue.

The sector has attracted 8 % of the cumulative foreign direct investment (FDI) over the last two years². The telecom sector is likely to see tremendous growth in India's rural and semi-urban areas in the years to come. By 2012, India is likely to have 200 million rural telecom connections at a penetration rate of 25 per cent, accounting for over 60% of the total telecom subscriber base³.

India is currently adding 8-10 million mobile subscribers every month. This would translate into 800 million mobile subscribers, accounting for a tele-density of around 51 per cent by 2012.

The booming domestic telecom market has been attracting huge amounts of investment which is likely to accelerate with the entry of new players and launch of new services. Buoyed by the rapid surge in the subscriber base, huge investments are being made into this industry.

Simultaneously, Indian telecommunication companies are now set to have a major global footprint. India's telecom equipment manufacturing sector is also emerging as one of the largest globally. Revenues are estimated to grow at a CAGR of 26.6 per cent from 2006 to 2011, touching US\$ 13.6 billion.

¹<http://www.dot.gov.in/osp/Brochure/Brochure.htm>

²<http://www.dot.gov.in/osp/Brochure/Brochure.htm>

³Confederation of Indian Industries and Ernst & Young – "India 2012 : Telecom Growth Continues"

Energy Impact:

The Telecom sector in India is expected to continue on its growth trajectory with continued support from the Government.

However, the operations required to realise such growth require increased access to energy, to significantly expand its network infrastructure, required to support value-added services, besides the key business of further penetration of tele-density in the rural segment.

Currently, the sector requires 14 billion units of electricity annually to power its growing network infrastructure in order to provide uninterrupted service to its consumers⁴. Out of the existing 3 lakh mobile towers, 1, 25,000 exist in rural and semi-urban areas where either the grid-connected electricity is not available or the electricity supply is irregular⁵. As a result, mobile towers in these areas, and increasingly in grid connected areas heavily rely on diesel gen-sets to power their network operations.

The consumption of Diesel by the Telecom sector currently is more than 2 Billion Litres annually, second only to the railways in India by 2007. This translates to an operational energy expense for the Telecommunication Sector, of INR 65 Billion, apart from other infrastructural costs, to operate their network towers, especially in off-grid locations. In turn, this constitutes around 30% of the sector's revenue from off-grid services.

In addition to the high operational expenses for the sector, this also results in a loss of around INR 14 Billion to the exchequer, considering the indirect subsidies the sector benefits from, in relation to diesel⁶.

The Telecom Sector in India (Public, Private, Indian and Foreign), through its operations powered by diesel, is responsible for 5.2 Million tons of CO₂ emissions (13 million tons overall), annually, and responsible for over 2% of the country's total GHG's emissions.

Into the future, these trends present a significant challenge to the economic sustainability and growth of the sector's business model, in addition to its ongoing significant contribution to climate change. The sector's significant reliance on Diesel to power its operations enhances its economic vulnerability, with increased expenses on the operational costs, as a result of the volatility of prices of fossil fuels in general, diesel in particular, besides the risk of access to depreciating fossil fuel resources. Moreover, increased consumption of Government subsidised diesel by the sector, also translates to increased losses to the ex-chequer.

Greenpeace's history with the Telecommunication Sector:

Since 2004 Greenpeace has engaged with the telecommunication industry to 'green' its supply chain and evaluate electronics brands on toxic chemical elimination, e-waste producer responsibility and climate change. Greenpeace's quarterly Guide to Greener Electronics has become an industry staple, steadily evaluating electronics companies' policies and products across a range of environmental criteria.

Towards sustainable telecommunication:

Power deficits coupled with the rising cost of diesel pose a significant challenge to the mid-term growth and profitability of the Telecommunication Sector. Continued reliance on diesel will also substantially increase the energy costs of telecommunication companies, besides the added environmental costs in the form of carbon emissions.

⁴http://www.gtllimited.com/pdf/corporate_forum\GTL-Sharat_Chandra-Telecom_Energy_Management_v2.0.pdf

⁵<http://www.communicationstoday.co.in/oct2007/telecom-towers-a-combination-of-passive-and-active-infrastructure-sharing-seems-to-be-the-way-to-go-2637-41.html>

⁶Currently Rs. 7 per litre is subsidy on diesel in consumer market. <http://timesofindia.indiatimes.com/business/india-business/Deregulation-Solving-diesel-conundrum/articleshow/7375419.cms>

While the current model of diesel powered networks offers the sector short-term capital gains, such a model of operation is likely to limit growth and profit generation prospects of the sector in the long term.

While programmes such as the National Solar Mission, under which the government is planning to support renewable based electricity for off-grid network towers, is a small step in the right direction, fundamentally, the Government should incentivize initiatives of Telecom companies where they significantly shift their business and operation model, from diesel to renewable sources of energy.

With its immense contribution to India's growth over the last two decades, the telecommunication sector is well placed to transit to a business model which relies on energy efficiency measures in combination with harnessing clean energy sources for its operations.

In this regard, Greenpeace believes that the Telecom sector in India should:

- Publicly disclose their carbon emissions and set a progressive emission reduction target
- Commit to shifting the sourcing of their energy requirements significantly towards renewable sources
- Make clear investment plans for co-development of renewable energy source along with development of new telecom infrastructure
- Enable a low-carbon economy by playing a significant role in advocating strong climate and energy policy changes in favour of renewable energy sources and technologies at the national and international level

About Greenpeace

Greenpeace is an independent global campaigning organization that acts to change attitudes and behavior, to protect and conserve the environment and to promote peace.

Greenpeace India Society

60, Wellington Street,
Richmond Town,
Bangalore- 560025
Tel: +91 80 41154861/42821010,
Fax: +91 80 41154862

<http://www.greenpeace.org/india/en/What-We-Do/Stop-Climate-Change/Green-Electronics/>

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