

# ISAS Brief

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## India's Infrastructure Needs

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### *Abstract*

*The recent power blackout in India has shed light on the poor condition of the country's infrastructure. Government spending on infrastructure has been long overdue even before the blackout took place in much of north India. For India to sustain its economic growth and development, spending has to be stimulated, both in quantitative and qualitative terms.*

The recent massive blackout across much of northern India has highlighted the country's ailing and aging energy grid. India's overburdened electricity system is not quite up to the standards required to meet the demand of a rising economic powerhouse. The latest power outage plunged about 700 million people into darkness and revealed that while the Indian economy has been striding ahead in recent years, the infrastructure is similar to that of a less developed nation. The infrastructure requires a complete overhaul if India is to become the superpower it aspires to be.

Despite impressive growth over the last few years, India's basic infrastructure in terms of transport, ICT (information and communications technology) and energy is ranked a dismal 89<sup>th</sup> in the World Economic Forum's 2011-12 Global Competitiveness Report – lowest among the BRICS economies. The Indian business community continues to cite infrastructure as being a drag on doing business in the country. In terms of electricity supply and telephone

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lines, India ranks in the bottom third for overall quality of infrastructure.<sup>2</sup> India is clearly not on a level-playing field among the BRICS economies in infrastructure investment, and it risks being left behind if these issues are not addressed soon. India's infrastructure spending is about eight percent of its Gross Domestic Product, compared to China's nine per cent. As such, in terms of spending on infrastructure, India and China have devoted similar shares in their budgets. However, spending on infrastructure has fallen short of India's economic growth – investment ratio has declined from about 50 per cent between 1988 and 1997 to 38 per cent in the period 1998-2007. In the 11<sup>th</sup> Five Year Plan, the government committed gross capital formation of four- to-nine per cent of GDP for the duration of the Plan 2007-12. The spending was estimated to be 28 per cent of the planned total infrastructure investment by the emerging markets and was to be only second after China's.<sup>3</sup> However, it remains to be seen how much of this planned investment can be realised over the course of the next Plan (2012-17), since spending during 2007-12 has fallen short of the slated target. During the 11<sup>th</sup> Plan period that ended in March 2012, investment in infrastructure sector fell short of the budgeted US\$ 500 billion – over the past five years a total of US\$ 425 billion was invested.<sup>4</sup> This means that India has made an average investment of US\$ 85 billion a year for the period 2006-2011, while it expects to spend on average US\$ 200 billion a year for the period 2012-17. Although the target is realistic, the goal might turn out to be slightly overambitious due to India's lower than expected growth rates and policy inertia in various sectors of the economy. In order to achieve and maintain its target of nine per cent growth rate, the Asian Development Bank (ADB) estimates that India needs to raise its infrastructure spending to about ten per cent of GDP by 2017.<sup>5</sup> The 12<sup>th</sup> Five Year Plan (2012-17) has outlined this vision and predicts spending of about US\$ 1 trillion in the sector. The total targeted investment will comprise of some private sector investment – US\$ 500 billion, with around US\$ 350 billion through debt and US\$ 150 billion of equity over the next five years.

Investment in the energy sector as a percentage of budgeted outlay has declined over the last decade, to about eight per cent as of fiscal year 2010. This is in contrast to the other sectors in the budget – most notably social services which has exhibited a consistent increase from about 27 per cent to just a touch under 40 per cent in fiscal year 2010. Spending on transport has remained more or less consistent at about 16 per cent of the budget but within the transport sector, allocation to railways has gone down to about five per cent from a high of eight per cent in the early 90s – the railway network has been starved for investment (Table 1).

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<sup>2</sup> India Blackout Shows Urgent Need For Infrastructure Spending Boost, International Business Times, Jul 31, 2012.<http://www.ibtimes.com/articles/368850/20120731/india-blackout-infrastructure-spending-singh-state-congress.htm>.

<sup>3</sup> Building India – Financing and Investing in Infrastructure, McKinsey & Company.

<sup>4</sup> 12<sup>th</sup> Five Year Plan (India)

<sup>5</sup> Asian Development Bank.

**Table 1 – Outlay by select sectors, 1999 to 2010**

**Percentage distribution in Annual Plans (Actual)**

Sectors	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Energy	22.3	22	19.9	21.3	22.3	23	8.9	9.5	9.1	8.4	8.2
Transport	14.6	13.9	16.1	16.8	15.7	14.7	15.7	16.9	16.2	14.2	16.2
<b>a. Railways</b>	5.6	5.1	5.5	5.3	5.8	n/a	n/a	n/a	n/a	n/a	n/a
<b>b. Others</b>	9	8.8	10.6	11.5	9.9	n/a	n/a	n/a	n/a	n/a	n/a
Social Services	23.9	22	24.9	27.1	27.9	30.2	37.4	35.7	38	40	39.7

**Source:** Planning Commission of India

Investment in electricity generation and transmission was budgeted to be a third of infrastructure investment during the 11<sup>th</sup> Plan (Figure 1). Despite increases in allotment to electricity, India has missed capacity addition targets by 50 per cent in last three Plans – an important implication for a country with increasing energy needs.<sup>6</sup> Aggregate investment targets were exceeded in fiscal years 2008 and 2007 in telecoms and pipelines, but investment in roads, railways and ports have been underwhelming.<sup>7</sup> These numbers have implications for the quality of the transport network. Even though India has the second largest road network in the world with 3.5 million km of road and a road density which is comparable to many developed countries, the quality is abject and below global standards. About 25 per cent of national highways are two- or four-lanes and an incredible 90 per cent of highways are inadequate to support the 10.2 tonne allowable load per axle<sup>8</sup> – these are some grim numbers. As for the ports, the capacity of 600 million mega-tonnes is already close to being breached. Estimates show that the major ports are running at 95 per cent capacity and the demand for handling is likely to reach about 1000 million mega-tonnes by 2012. Here again, efficiency of these ports with respect to turnaround times is poor – the average time it takes between the arrival of a ship and its departure from the major Indian ports is 3.5 days, compared to 10 hours in Hong Kong.<sup>9</sup> As such there is ample scope to increase competitiveness of the ports.

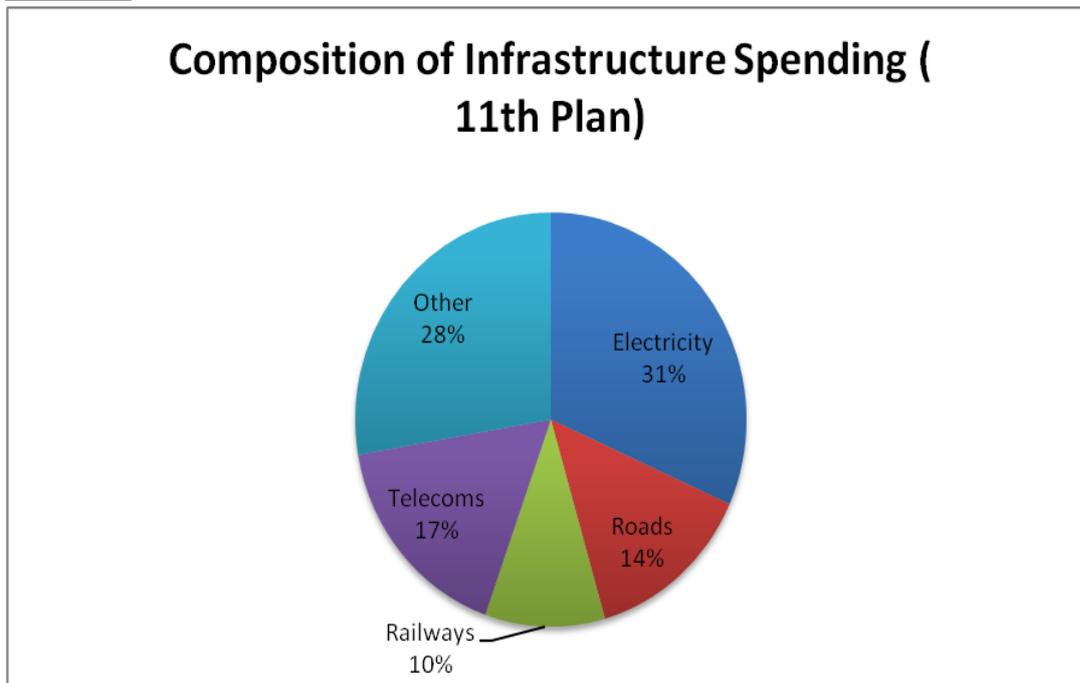
<sup>6</sup> Power Grid Failure, deadly train fire highlight India's crumbling infrastructure, The Economic Times, Jul 30, 2012. <http://economictimes.indiatimes.com/news/economy/infrastructure/power-grid-failure-deadly-train-fire-highlight-indias-crumbling-infrastructure/articleshow/15283530.cms>.

<sup>7</sup> Mid-Term Appraisal (MTA), 11<sup>th</sup> Plan.

<sup>8</sup> Building India – Financing and Investing in Infrastructure, McKinsey & Company.

<sup>9</sup> India – 2012 IMF Article IV Consultation

**Figure 1:**



**Source:** Eleventh Plan Mid-Term Appraisal

Various problems have plagued the implementation of a coherent strategy, such as those ranging from difficulties in land acquisition to bureaucratic red tape. Land acquisition in particular has been notoriously difficult. Government clearances have been difficult to obtain with numerous restrictions pertaining to environmental, social, political and economic concerns, each requiring their respective settlement in legal settings. This makes implementation of large-scale projects extremely complicated and in the process discourages foreign companies from entry – investment in new infrastructure projects is curtailed greatly. Infrastructure maintenance is also a problem, in addition to inadequate and poorly targeted spending. The indefinite closure of the flagship Delhi Airport Metro Express (DAME), which was built at a cost of US\$ 1 billion and links the Indira Gandhi International Airport, is symptomatic of the larger problems. Questions about the quality of the construction and the maintenance thereafter have been raised. Faults were detected on the line which would have rendered travelling on the rail link potentially hazardous. The operation of the express was suspended on 8 July 2012, just 16 months after the link was opened. The fact that this was a build-operate-transfer PPP (Public-Private-Partnership) contract with Reliance is also a cause for some consternation – despite the involvement of an Indian private sector powerhouse in what was deemed a rather prestigious project, the outcome was not as positive as one would have hoped. Defects in the rail structure were reported just over a year after it was opened for traffic, again indicating that the construction might have been faulty to start with. India's inability to attract foreign investment in infrastructure development has also been criticised, with potential foreign investors being wary of stringent government tax policies, a series of corruption scandals and political opposition to further opening up of the economy. India's

faltering power infrastructure can be partly explained by the government control of the assets. The government controls 90 per cent of electricity assets at the moment, leading to numerous inefficiencies in the form of leakages, pilferages and allegations of corruption. Such inefficiencies extend to power network losses, which amounted to about 32 per cent in 2010, a significant proportion of which are “non-technical losses”. A high proportion of such losses have been attributed to illegal encroachment of lines throughout the country – with consumers and maybe even businesses extracting more than their share of electricity – and the defective electric meters that underestimate actual consumption of electricity.<sup>10</sup> In addition, the power sector remains over-regulated and there is not enough private sector investment; unless private companies are allowed to play a greater role, it will be difficult to rely on just the government to expand the power generation capacity of the nation.<sup>11</sup>

The government has laid out ambitious plans to further develop and upgrade India’s infrastructure. However, more dynamism has to be displayed in implementation. It is encouraging to note that private sector participation through PPPs is on its way to achieving greater efficiencies in the development, operation and maintenance of various aspects of the infrastructure. To that end, legislation should be passed to facilitate land acquisition and mining for infrastructure provision. The establishment of an active and liquid corporate bond market is being pursued, which should provide ample financing opportunities for investment. Financial inclusion of significant segments of the population should allow more savings to be channelled through the financial system as well. On a similar note, investment restrictions on long-term savings instruments such as insurances and pension funds should be eased to direct more funds into infrastructure investment. Finally, it is also vital that India strengthen its finances so as to free up public resources for further investment in infrastructure and power.

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<sup>10</sup> Uwe Remme, Nathalie Trudeau, Dagmar Graczyk and Peter Taylor (February 2011). "Technology Development Prospects for the Indian Power Sector", International Energy Agency France; OECD.

<sup>11</sup> India Blackout Shows Urgent Need For Infrastructure Spending Boost, International Business Times, Jul 31, 2012.