

# Connexions

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QUARTERLY NEWSLETTER ON NCAER-CEPR-IDEI-ECARES ECCP PROJECT\*

- Inland Waterways for Cargo Transportation: Yield and Feasibility
- Electricity Industry: Limits to Liberalization
- Telecommunications: First Steps to 3G
- PPPs: Normative and Positive Theories

## Participating Institutions

- The National Council of Applied Economic Research (NCAER), New Delhi
- Centre for Economic Policy Research (CEPR), London
- Institut d'Économie Industrielle (IDEI), Toulouse
- European Centre for Advanced Research in Economics and Statistics (ECARES), Brussels



\*Efficiency, Equity and Access in Indian Infrastructure: Blending Competition and Regulation (Project Co-funded by The European Union under the "University & Studies" dimension of the EU-India Economic Cross Cultural Programme). The contents of this newsletter are the sole responsibility of contributors and can in no way reflect the views of participating institutions or the European Union.

# Economic Yield and Feasibility of the Inland Waterways Mode of Cargo

The NCAER research study estimates the total potential transportation demand for all commodities for transportation by the IWT mode at 6 billion tonne-km in 2010-11 and at 7.7 billion tonne-km in 2020-21, provided the facilitation measures suggested in the report are implemented

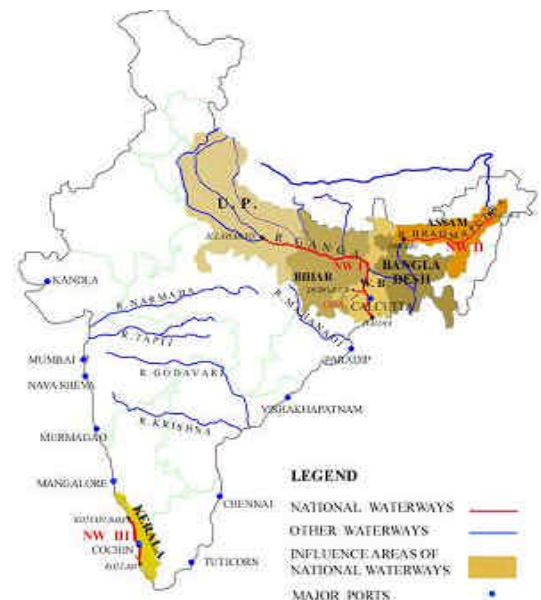
Inland Water Transport (IWT) forms a small part of the total transport network of the country in spite of being energy efficient, economical, and environment friendly. The primary reason for the low share of IWT traffic is its spatial limitation. It is confined to specific regions, and is effective only when both the origin and the destination of the production and the consumption centres are located on the waterfront. In addition, there are a number of navigational hazards affecting waterways, such as shallow waters or inadequate depth, siltation, bank erosion, etc.

However, IWT has a number of benefits. On an international standard, the operating cost of IWT is 1 cent as compared to 2.5 cents by rail and 5.3 cents by road. It provides higher fuel efficiency as compared to either rail or road; 3.8 litres (1 gallon) of fuel transports one tonne of freight through 827 km by a barge compared to 325 km by train and 95 km by truck. Water transport is also the safest mode of transporting large quantities of chemicals and toxic materials with the least danger to the surrounding cities. It is also environment friendly, and creates less noise pollution and reduces pollutant levels in the air. Moving freight through barges also helps in reducing the level of congestion on roads and rail tracks. In the Indian context, the cost of the additional time taken to transport goods through IWT does not factor in because of the saturation of the rail and road networks.

In addition to these factors, IWT also contributes to social development of the hinterland. So far no attempt has been made to quantify the social and economic benefits. This report addresses the lacuna by quantifying these benefits through field surveys. The economic yield of investment is estimated at 17 per cent. The report also lists a number of benefits that the connectivity provided by the inland waterways will bring to their surroundings.

The current share of cargo movement by the national waterways in India is very low. National Waterways 1 (NW1) between Patna and Haldia and National Waterways 2 (NW2) between Dhubri and Sadiya (see Figure 1) currently carry a total cargo of the order of 0.78 million tonnes; the influence area and the hinterland they serve can be seen in Figure 1.

**Figure 1: Indian Riverine System**



In this study, the transportation demand of commodities that have the potential of becoming candidates for movement by IWT (NW1 and NW2) in the medium to the long term, viz. steel, coal, cement, fly ash, and fertilizer, was estimated. The current transportation demand (1999-2000) of the above selected commodities is 0.17 billion tonne-km. This is expected to increase to 1 billion tonne-km by 2010-11 and to 1.3 billion tonne-km by 2020-21. The NCAER research study estimates the total potential transportation demand for all commodities for transportation by the IWT mode at 6 billion tonne-km in 2010-11 and at 7.7 billion tonne-km in 2020-21, provided the facilitation measures suggested in the report are implemented.

The annual operational net 'economic' gain for transportation employing the IWT mode over the alternative road mode (rail lines in the influence area are congested and are used by the Railways to transport high-revenue-yielding commodities) has been used to compute the economic yield as well as to compute the net present value assuming operations would span at least 25 years, at the test discount rate of 10 per cent. The major components-wise net economic savings estimated as:

- **Savings in Operating Cost:** Operating cost of transportation by trucks was estimated at Rs. 1.09 per tonne-km and for IWT at Rs. 0.13 per tonne-km. The present value of savings in operating works out to be Rs. 70 crore. This has the potential of increasing significantly once the transportation volume picks up.
- **Savings due to Avoidance of Accidents in Terms of Numeraire:** The present value of economic gains on account of avoidance of accidents as a result of the movement of cargo on National Waterways was calculated for identified origin-destination pairs at Rs. 36 crore. IWT costs and benefits are only computed for identified origin- destinations and commodities that would use these pairs.
- **Savings due to Reduced Government Expenditure on Medical Aid:** The present value of the expenditure incurred by the government in combating diseases caused by air pollution arising out of road transportation was calculated to be Rs. 17 crore. This expenditure can be taken as savings or gains due to IWT as it is a pollution-free mode of transportation.
- **Economic Gains through Additional Jobs Created due to Provision of Economic Connectivity to the Hinterland in Terms of Numeraire:** The employment potential in villages benefiting from the IWT mode was estimated by the NCAER field visit team at 5.3 million (assuming that IWT operates for 300 fair-weather days). The present value of economic gains, assuming a shadow wage rate of 0.5 at the test discount rate of 10 per cent, due to additional employment opportunities, was estimated at Rs. 782 crore. The magnitude of immense benefits through employment creation in the underdeveloped hinterland due to the provision of economic connectivity can be gauged from the above estimate.

In other words, roughly 3,000 new jobs are created in the influence area for every kilometre of operation of inland waterways.

Inland waterways is the most employment-intensive mode of transportation service as per the latest Input-Output Table (1998-99 prices) released by the Central Statistical Organization (CSO) in 2005, as well as per a survey of inland waterways by the National Sample Survey Organization (NSSO) (unorganized service sector 2001-02). For instance, Rs. 1 lakh revenue collection (at 1998-99 prices) in the inland waterways mode results in 6.5 man years of employment, while that in the railways results in a mere 0.58 man years; in other transport modes (average of all excluding railways), it is 0.87 man years.

The inland waterways revenue collection of Rs. 1 lakh results in 11 times the employment that is generated when the rail mode of transportation is adopted, or roughly eight times the employment created through the road mode.

Since the social and economic benefits are very significant, and the role of IWT in social development can be noteworthy, the government needs to provide Rs. 510 crore as 'viability gap funding' until the cargo volume increases to the financial break-even level.

There was scepticism that IWT would not be the preferred transportation mode on account of the longer time taken for the transportation of goods or the tariff that would be levied on the bulk movement of cargo through IWT. Contrary to this belief, the major existing and potential users see this as a mechanism for maintaining a buffer stock or a 'mobile inventory' through pre-scheduled dispatches at regular intervals. Indeed, these major users look forward to the efficient establishment of the IWT mode since the opportunity cost of not having the IWT mode could be very high due to disruption in production processes. If the inventory level is built up to the saturation point due to non availability of alternative mode of transportation such as railways, roadways etc, then the IWT provides the "mobile inventory" of goods for selected destination pairs.

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# Limits to the Liberalization of the Electricity Industry

There is also a persistent and significant vertical integration between generation and retail, and insufficient unbundling between supply and transportation, despite the EU legislation

Ten years after the first directive aimed at promoting competition in the European electricity industry, the European Commission (EC) continues to complain about the lack of enthusiasm of most Member States in unbundling incumbents and opening markets to new entrants, and about the poor results of liberalization. In the Sector Inquiry Report of February 2006, the EC wrote: 'The five main barriers to a fully functioning internal energy market are i) market concentration, ii) vertical foreclosure, iii) lack of market integration, iv) lack of transparency and v) price formation.' Indeed, the Report explains that in most Member States, not only does a high level of concentration persist in generation (with associated market power for incumbent operators) but there is also a persistent and significant vertical integration between generation and retail, and insufficient unbundling between supply and transportation, despite the EU legislation. The existing interconnections between Member States and the rules for allocation of existing capacity are insufficient to create competition among firms located in different countries. There is a lack of transparent information on wholesale markets, availability of interconnectors, availability of generation capacity, forecasted and actual load, and balancing and reserving power needs. Finally, on price formation, the EC says that several national markets are not competitive and demand does not play a role, in particular because there remain both free and regulated supply markets.

In the communication relating to the methodology for analysing state aid linked to stranded costs (25 July 2001), the EC recognized that the drivers for liberalization in the electricity industry have been more political than technical or economic:

*"Aid to compensate for stranded costs in the electricity industry can be further justified in relation to other liberalised sectors by the fact that liberalisation of the electricity market has not been accompanied by either faster technological progress or increased demand and by the fact that it is hardly conceivable, in the interests of environmental protection, security of supply and the smooth operation of the Community's economy, to wait until electricity undertakings encounter difficulties before considering whether to grant them state support".*

For electricity, the European regulatory authority relies on the basic economic model of network activities: transmission (high-voltage transport)

and distribution (low-voltage transport) are natural monopolies for which competition is impracticable and they require sectoral regulation; generation and supply are competitive activities; de-integration, market forces, and antitrust authorities will promote efficiency.

So the first step of the liberalization process has been to demand the separation of grid activities from node activities. This partition has made visible several service requirements that were formerly internalized by incumbents. But why would it be more difficult, impossible even, than in other industries to perform these ancillary activities through markets? The second stage of the liberalization process consists of two strategies: first, decreasing concentration in production and supply by assets sales and making entry easier and secondly, converting consumers into active demanders. Why are many governments so reluctant to promote competition in generation and supply?

The most common reason may be that some specific features of electricity have been underestimated, namely (i) it is a non-storable product; (ii) demand is cyclical and random; and (iii) it is an intermediary product that requires particular equipment for consumption.

In industrialized countries, the entire daily life of households and a large proportion of industrial and business activity are electricity dependent because of equipment installed at consumption locations. Thus power outages are catastrophic, and to protect citizens against catastrophes in Europe, the Member States assiduously promote national champions who can allegedly 'guarantee' secure provision of cheap energy. Indeed, integration goes beyond electricity: the most recent mergers in Germany and the wished-for mergers in France and Spain combine natural gas and electricity, against the advice of competition authorities. How is it that the UK and the Nordic countries are more market oriented than other countries in Europe? The basic obstruction in continental Europe is probably that the consumers of energy are less mature, less price responsive, and poorly trained in behaving as economic agents. They view electricity as an essential input with public good's features rather than as a marketable commodity. As long as demand is not trained to be market reactive, liberalization will not work.



# Better Spectrum Planning: First Step towards 3G

The Telecom Regulatory Authority of India (TRAI) has recently finalized its recommendations on the spectrum and pricing of 3G services. Spectrum management should serve at least the three following purposes: (a) granting of exclusive rights to spectrum; (b) ensuring efficient use of spectrum; and (c) promoting competition in services. A key issue in managing all of the above optimally is to define adequate property rights for the spectrum.

It is useful to compare spectrum property rights with the property rights in real estate. In a competitive market, the spectrum is bought at a price by operators, much like buying real estate, using methods such as auctioning, beauty contests, and lotteries. The property rights of the real estate owner can also include certain restrictions on usage, for example, various building regulations, in order to avoid interference with neighbouring properties and general public interest. In order to avoid interference issues, the Wireless Planning and Coordination (WCC) wing of the Department of Telecommunications (DoT) has developed the National Frequency Allocation Plan (NFAP) and specified the usages of various frequency bands for various applications. Technology innovations in telecom continue to give birth to new applications that interfere with legacy applications. For example, Wi-Max technology that operates in the 2.5 GHz and 3.5 GHz bands pursued by DoT and service providers interferes with those currently being used for the INSAT communications of the Department of Space (DoS). Mobile TV applications that use 700 MHz interfere with traditional TV broadcasting. It is important to revisit and critically examine these interference issues from time to time.

For example, a portion of the 1900 MHz (1980-90 MHz) demanded by Code-Division Multiple Access (CDMA) operators for 3G services could be considered if there are no demonstrated interference issues.

In real estate, if a certain piece of land is needed for a public purpose, for example, for building an infrastructural facility, it may be possible to expropriate the property. In India, the better part of the spectrum in the 1800 MHz band used for GSM-based cellular mobile services in the country is being used by the Department of Defence (DoD). The government has recently

been making efforts to release up to 45 MHz spectrum from the DoD in the interest of increasing mobile services in the country. Just as unused land resources may be confiscated and allotted to users in the public interest, the recent notification by the Department of Telecommunications (DoT) to organizations such as Indian Railways and Mahanagar Telephone Nigam Limited bids them to vacate the unused spectrum.

The response to the need to resolve the above complexities of spectrum management has been a rather detailed regulation, where the government and the regulator are responsible for defining the applications and for assigning resources to particular users. An alternative is to adopt a market-oriented approach towards spectrum management. However, this approach has its own problems, including interference among users, issues of international coordination and harmonization, and conflicting interests among operators. Given the legacy of spectrum management in our country and the still evolving telecom market, the market approach is risky.

There are various stakeholders involved in the spectrum game: DoD and DoS, which are large users of various spectrum bands; the Ministry of Finance (MoF), which looks at spectrum allocation from an economic point of view to ensure that the existing supply of radio spectrum is used in a way that maximizes the economic value; and DoT, which uses the technical approach of allocating spectrum resources optimally in order to promote competition and to minimize the interference between various applications.

However, the government and the regulator should adopt a transparent long-term view with respect to spectrum management, taking into account various technical, economic, historical, and political factors. Though refinements to NFAP are being carried out periodically by WCC, a detailed frequency plan similar to the Interactive Frequency Plan published by the Danish Telecom Agency, incorporating the spectrum demands of current and emerging technologies and applications, is critical. Clarity on spectrum allocation and allotment is needed for sustaining growth and competition in mobile services.

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# Normative and Positive theories of PPP

The key reason for bundling is to be found in technology and in the efficient match between a good design and an efficient control of operating costs. The ownership issue is only secondary

One of the most intriguing issues in modern industrial organization is delineating the optimal division of labour between the public and the private spheres. Most scholars and public decision-makers advocate for a more pragmatic approach of promoting efficient partnerships between the public and the private sectors for the provision of major services and public goods.

The traditional form of public procurement has so far relied on some kind of unbundling of those tasks. First, the government designs the characteristics and quality attributes of the project. Second, the government chooses a private builder to build assets but retains ownership. Finally, the government chooses an operator, who may be either public or private, to manage these assets and to provide the service.

Several initiatives around the world and various legal reforms have proposed an alternative form of procurement, the Public-Private Partnerships. With this mode, the government takes a more minimalist stance: choosing a private consortium to design the quality attributes of the infrastructure, build those assets and finally manage them as efficiently as possible.

The first question to be asked here is why and under what circumstances are these two alternative forms of procurement optimal. Typically, the tasks are subject to moral hazard from the side of the builder and the operator of infrastructure. The efforts of the builder to enhance the quality of the infrastructure and the efforts of the operator to manage these assets efficiently are non-verifiable. Thus, delegation to the private sector generates an agency cost. The optimal form of procurement is the one that minimises these costs.

The next question is: when tasks are bundled do agency costs exhibit some kind of economies of scope? One can show that ownership and its impact on incentives is not key to understand the optimal form of procurement. Instead, the key reason for bundling is to be found in technology and in the efficient match between a good design and an efficient control of operating costs. The ownership issue is only secondary.

Two cases are a priori feasible. First, a better

design of the infrastructure may help in saving on operating costs, the case of a positive externality. Second, a better design may also require learning of new procedures for managing assets and, thus, increase operating costs, the case of a negative externality.

With a positive externality, both tasks should be performed by the same firm which can internalize the impact of a better infrastructure design on operating costs. Under moral hazard, there is a trade-off between providing incentives to the builder to improve the quality of the infrastructure and giving him insurance against adverse shocks on the realized quality. This trade-off calls for reducing the power of incentives so that the builder exerts less than the first-best effort. This declining quality of the assets may increase the operating costs excessively and thus exert a negative externality on the operator if the building and the managing assets are unbundled. The builder and the operator should thus be merged into a single entity. For a negative externality, the two tasks should be split because solving the agency problem on one task exacerbates the incentive problem on the other. This is reminiscent of the tasks separation occurring under standard procurement practices.

In practice, performance contracts are not always feasible and ownership matters. For instance, the quality attributes of an infrastructure may be hard to specify in advance so that complete contract with a builder may be difficult or even impossible to write. Ownership then provides the incentives to improve quality.

When incentives for building can only be provided by allocating ownership, the decision about whether or not to bundle the two tasks may help in improving the quality-enhancing effort. For instance, when the private owner does not have enough private incentives to improve the quality of the assets, making him also responsible for the management of those assets fosters incentives in the case of a positive externality. A contrario, when private incentives are excessive, bundling tasks may not be a good idea. In that incomplete contracting environment, the modern form of PPPs emerges when private owners have rather weak incentives to enhance assets quality compared with what would be socially optimal.

# Infrastructure News

## Electricity

### Load Management Entity

The government is considering a proposal for setting up of a public sector entity that will take over the task of load management from the Power Grid Corporation which has commercial interests. This is in accordance of the Electricity Act 2003 which says there should be separation of commercial interests from load management functions.

Source: [www.businessstandard.com/economy](http://www.businessstandard.com/economy)

Date: August 24, 2006

### India's Largest Power Station Dedicated to Nation

The Thalcher Super Thermal Power Station was dedicated to the Nation by the Prime Minister. This has a capacity of 3,000 MW, and is the largest power station in the country at present.

Source: [www.powermin.nic.in](http://www.powermin.nic.in)

Date: August 28, 2006

### DERC Allows Discoms to Procure Power

The Delhi Electricity Regulatory commission has approved a joint bid filed by all the discoms in Delhi to arrange for power on their own. The privatization agreement did allow the discoms to arrange for extra power on their own if what they got from Transco did not fulfill the power demand of the consumers. The discoms did not act in the last four years because of which Delhi suffered one of the worst ever power crisis this summer. The discoms had to take this step as Transco will have to stop trading in power from next year when the five year transition period of takeover is over. A new joint power trading company may be formed of the government and the discoms.

Source: *Times of India*

Date: September 6, 2006

### FDI

One of the world's biggest investment firms Lehman brothers will partly finance two power projects of 1250 MW capacity of the Hyderabad based KSK Energy Ventures to be set up in association with the Gujarat Mineral Development Corporation in Chhattisgarh and Jharkhand respectively.

The two projects will require an investment of Rs. 5,500 crore.

Source: [www.economictimes.indiatimes.com](http://www.economictimes.indiatimes.com)

Date: September 12, 2006

## Telecommunications

The runaway growth of mobile connections has led to a steep increase in inter-network traffic. Point of Interconnection (PoI) congestion is on account of inadequate junctions between two networks and this leads to loss of calls and the consequent poor quality of service to the client. The congestion report for the period between January to May 2006 shows that the number of Points of Interconnection (PoI) having congestion above the prescribed benchmark of 0.5 per cent has increased from 390 in January to 616 in May.

Source: *Times of India*

Date: September 6, 2006

### Spectrum Utilisation Efficiency

At a recent meeting, the Department of Telecommunication (DoT) decided that though the subscriber base criterion would be adhered to while allocating additional spectrum, the government needed to verify whether operators were using the existing spectrum efficiently. What sparked this was the discovery that China was supporting about 300 million subscribers with 65Mhz for a little over 100 million mobile phone subscribers. At this rate, telecom operators could seek nearly 125 Mhz of spectrum to support 300 million subscribers. The technical verification will include mainly base transceiver station (BTS) density in a specified area, the distance between two near BTSs in dense traffic areas and carrier deployment patterns.

The verifying panel will ascertain whether networks choke because of a lack of spectrum or due to fewer BTSs in high traffic areas. It will also ascertain if operators are re-using the frequency efficiently or not. Only after the panel said that operators were complying with norms would they be eligible for additional spectrum.

Source: *The Financial Express*.

Date: September 4, 2006

### India rings Fastest Cell Growth

In yet another landmark for the cellular industry, India has added highest number of mobile subscribers in the world during August. That is more than China's monthly increases, although its base is nearly four times that of India. India added 5.9 million cellular subscribers during August as against China's 5.19 million, according to GSM industry association COAI, which quoted data from research firm EMC and UK based journal Wireless Intelligence. As of August end, India had 116.5 million cellular subscribers - 86.6 million on GSM networks ( Airtel, BSNL, Hutch, Idea ) and 29.9 million on CDMA ( Reliance and Tatas ). The world subscribers now are 2.58 billion.

Source: *Times Business, The Times of India, New Delhi*

Date: September 14, 2006

### Teledensity: Equity Matters

There is a reason why India has become as big telecom success story but not the biggest. For one, the rural teledensity effort in India has been lagging since 1995 (at 10 per cent) although urban mobile teledensity has skyrocketed to 40 per cent. Besides Indian companies are waiting in the wings for the big chance : a government subsidy for going rural.

Source: *Indian Express*

Date: September 18, 2006

## Civil Aviation

### Ongoing Expansion of Civil Aviation

Following steps have been taken for the expansion of the Civil Aviation sector:

- FDI has been increased to 49 per cent in air transport services and non-resident Indians (NRIs) have been allowed 100 per cent FDI.
- Private Scheduled carriers with five years experience in domestic sector have been permitted to operate international routes.
- Liberal policy in the exchange of capacity entitlements/traffic rights

paving the way foreign airlines to operate to/from India.

- Amendment of outdated Aircraft rules keeping in view present international standards.
- Restructuring of Delhi and Mumbai airport and development of green-field airports at Bangalore and Hyderabad.

Source: [www.pib.nic.in/release](http://www.pib.nic.in/release)

Date: August 3, 2006

### Foreign Direct Investment

India is emerging as a major investment destination for major international aviation companies such as EADS and Boeing who have committed Rs.200 billion. These are the largest investments made by these companies outside US and Europe. Indian carriers have placed orders for over 100 airplanes from Boeing while Airbus received orders for about 300 aircraft.

Source: [www.in.rediff.com/money](http://www.in.rediff.com/money)

Date: August 31, 2006

### ATF Price Hike Induced Tariff Rise

The domestic airlines industry will be forced to hike air fare because of the four % increase in aviation turbine fuel.. The air passenger fares are likely to increase by Rs. 750 in three months.

The Jet Airways will revise the fuel surcharge by Rs. 100 per trip. Indian Airlines, Air Deccan and Spice Jet are likely to follow suit along with Go Air and Kingfisher Airlines. Moreover, the government is considering a proposal of imposing a cess on air ticket to support its HIV/Aids programmes. This will affect the passenger demand. India witnessed 702 million passenger trips in the first quarter of the current financial year compared to 5 million trips in the corresponding period last year.

Source: [www.businessstandard.com](http://www.businessstandard.com)

Date: September 4, 2006

### Competition Matters in Civil Aviation Market

A proposal has been drafted by the Civil Aviation ministry to put a cap on market share of entities formed after merger between airlines. This proposal would determine if mergers can be allowed in case



the new entity exceeds the cap. The cap is still to be decided. Market share will constitute not only the number of passengers carried but also percentage of airport infrastructure and routes controlled by the merged entity.

Source: [www.businessstandard.com](http://www.businessstandard.com)

Date: September 5, 2006

Six out of the 12 airline companies have sought permission from the civil aviation ministry to launch operations in non metro cities such as Jaipur, Trichi, Indore and Guwahati. This will bring competitive fares to non metros.

Source: *Times of India*

Date: September 6, 2006

### Equity Matters

The government is planning to increase the paid-up equity capital requirement for domestic airlines by about 70 per cent to qualify them as scheduled operators. This move will ensure only serious players will enter the market. As per this guideline, an airline operating with aircraft take off mass exceeding 40,000kg will need paid up equity of Rs.50 crore and a carrier with a take off mass of less than 40,000 kgs, will require paid up capital requirement of Rs. 20 crore.

Source: [www.economictimes.indiatimes.com](http://www.economictimes.indiatimes.com)

Date: September 8, 2006

## Railways

### Expansion of Railway Network

The Railways have spent an approximate amount of Rs. 161 crore for the setting up of new lines and Rs. 635 crore for gauge conversion during first four years of the Tenth Five Year Plan. The various improvements which have been undertaken at the railway stations have been carried out under the Planhead 'Passenger Amenities' and the expenditure incurred under this during the corresponding period is Rs. 238 crores.

Source: [www.pib.nic.in/release](http://www.pib.nic.in/release)

Date: August 24, 2006

### Mobile Telephony in Railways

The railway ministry has decided to provide Mobile Train Radio Communication (MTRC) between driver and guard as well as

the Station Master and the field maintenance staff and control office on a total of 3200 Route Kilometers covering 5 railway zones. This would enhance safety as well as help the maintenance staff along the tracks.

Source: [www.pib.nic.in/release](http://www.pib.nic.in/release)

Date: August 25, 2006

### Annual Railway Performance

The total approximate earnings on originating basis were Rs. 1490.61 crore compared to Rs. 1313.11 crore last year which is an increase of 13.52 per cent. The total goods earnings have gone up to Rs. 997.82 crore from Rs. 883.30 crore last year which is an increase of 12.97 per cent. The passenger revenue was Rs. 429.57 crore compared to Rs. 392.13 crore last year.

Source: [www.pib.nic.in/release](http://www.pib.nic.in/release)

Date: August 29, 2006

### Railways Performance April-August 2006

The total approximate earnings on originating basis were Rs. 24576.87 crore compared to Rs. 21229 crore during the corresponding period last year which is an increase of 15.77 per cent.

The total goods earnings have gone up from Rs. 14201.50 crore to in the corresponding period last year to Rs. 16540 crore this year which is an increase of 16.47 per cent.

The total passenger revenue earnings were Rs. 7082.04 crore compared to Rs. 6339.23 crore last year which is an increase of 11.72 per cent. Revenue from other coaching also increased by 37.82 per cent since last year along with the increase in sundry earnings by 40.75 per cent.

The total number of passengers booked were 2620.35 million compared to 2414.55 million in the corresponding period last year which is an increase of 8.52 per cent.

Source: [www.pib.nic.in/release](http://www.pib.nic.in/release)

Date: September 8, 2006

## Roads

### National Road Transport Policy

A National Road Transport Policy has been drafted by the Department of Road Transport and Highways which envisages public-

private partnerships in road construction projects, rationalization of motor vehicle tax regime, development of backward areas, development of a database as well as technological upgradation and emphasis on environment.

The draft National Road Transport Policy also envisages employment generation through formation of co-operative societies of unemployed youths by the various state governments which would take up the task of maintenance, tree plantation as well as protection of assets.

*Source: www.pib.nic.in/release*

*Date: August 17, 2006*

### **Golden Quadrilateral Project**

92.6 percent of the Golden Quadrilateral Project has been completed as on 31.7.2006 and 96 percent is expected to be completed by December 2006. The NHDP Phase III A is progressing as per schedule and the target date for its completion is December 2009. An officer from the Railways has been posted to the National Highway Authority of India to expedite the construction of Road Over Bridges.

*Source: www.pib.nic.in/release*

*Date: August 17, 2006*

## **Cess**

The government is contemplating continuing with the Rs. 2/litre cess on fuel for the next two decades as this cess is an important instrument for financing road projects particularly the highway projects as well as repaying loans. Loans raised for the road sector projects in 2005-06 was over Rs.6,018 crore which necessitated the extension of the cess. The government has already spent Rs.2,29,019 crore on National Highway Development Projects (NHDP) and needs an additional Rs. 41,210 crore to implement NHDP-V.

*Source: www.economictimes.indiatimes.com*

*Date: August 23, 2006*

### **Proposed NHAI Subsidiary:**

The government is considering a proposal to put the highway projects on the fast track by setting up a separate company under the NHAI which will concentrate on expressway development. The new entity will initially take up construction of about 1,000 kms of expressways under the NHDP VI programme and this body will

mainly constitute of experts in the field of expressway development. The setting up of this new entity has been necessitated as progress of NHDP Phase III is slow.

*Source: www.economictimes.indiatimes.com*

*Date: September 6, 2006*

## **Ports**

The Department of Shipping and Port authorities have emphasized the need for the upgradation of 187 minor ports in order to increase the aggregate capacity of the port sector to 2000 million tonnes per annum by the year 2016-17.

*Source: www.pib.nic.in/release*

*Date: August 10, 2006*

### **Port as a Special Economic Zone**

The Kandla Port Trust has sought permission from the Centre for developing 6,094 hectare of land at Kandla and Tuna into a port based special economic Zone matching international standards. Kochi based agency Kitco has been appointed for preparing a special project report.

*Source: www.businessstandard.com*

*Date: August 28, 2006*

### **Advanced Maritime Studies**

The Central Government proposes to set up the Indian Maritime University at Chennamacherry, near Chennai. The National Maritime Complex would come up on a 400 acre plot for promoting the maritime studies.

*Source: www.businessstandard.com*

*Date: September 3, 2006*

### **Additional Berth at JN Port**

The Jawaharlal Nehru Port Trust (JNPT) which handles 58 per cent of the country's container traffic is planning the creation of an additional berth by extending the existing container berth by 330 metre at the north and the estimated cost would be Rs 500 crore. The extension of current berth would increase the capacity by about 7.2 million tonne. JN port handled 2.67 million TEUs of container traffic during 2005-06.

*Source: www.businessstandard.com/compindustry*

*Date: September 11, 2006*

# Project Activities

## Forthcoming Events

- A Policy Roundtable, focusing on the Telecommunications sector, is to be held on October 12, 2006 at the Finlandia Hall, Helsinki. This event will coincide with the EU-India Business Summit which will also be held at Helsinki. The Policy Roundtable will have participation from the research and policy community from, both, India and Europe.
- NCAER is an Academic Partner to the Conference on Infrastructure to be held on Nov 27-29, 2006 is being organized by IBC-Asia (S) Pte Ltd. For details please visit: [www.abc-asia.com/indiainfrastructure](http://www.abc-asia.com/indiainfrastructure).
- The final conference on the project will be held on December 4-5, 2006 at New Delhi. The conference will include (a) technical sessions, (b) a forum for regulators and presentations and panel discussions on issues relating to regulation and competition in infrastructure industries.

## Database on Indian Infrastructure

A database at the NCAER Centre for Infrastructure and Regulation is maintained and updated on monthly basis for data on telecommunications, electricity, and transportation sectors. The transportation sectors further cover civil aviation, railways, ports and shipping.

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## Acknowledgements

**"Economic Yield and Feasibility of the Inland Waterways Mode of Cargo Transportation- "**

*by Mr R.Venkatesan, Senior Fellow and Ms Kanika Kalra, Research Associate, NCAER, New Delhi*

**"Limits to the Liberalisation of the Electricity Industry "** *by Prof Claude Crampes, IDEI, Toulouse*

**"Better Spectrum Planning :First Step towards 3G"** *by Prof V.Sridhar, Management Development Institute, Gurgaon*

**"Normative and positive theories of PPPs "** *by Prof.David Martimort, University of Toulouse and Prof. Jerome Pouyet, Ecole Polytechnique and University of Toulouse*

**"Infrastructure News"** *by Centre for Infrastructure and Regulation, NCAER*

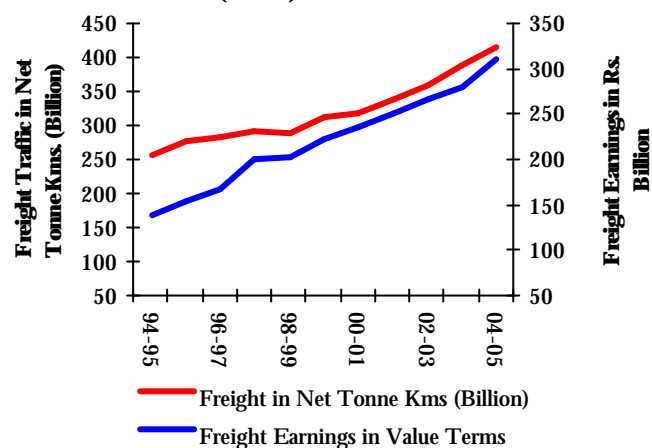
**"Statistics"** *by Ms. Nandini Acharya, Research Associate, Centre for Infrastructure and Regulation, NCAER*

**ConneXions** is also available at:

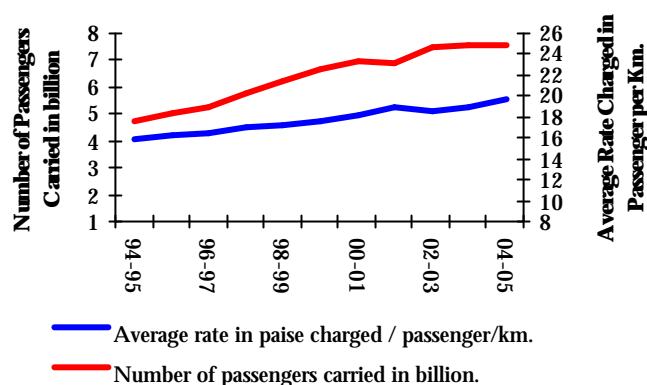
[www.ncaer.org](http://www.ncaer.org) and [www.cepr.org/eeaii/](http://www.cepr.org/eeaii/)

*For information on the newsletter, email at : [divjotsingh@ncaer.org](mailto:divjotsingh@ncaer.org) OR [indpack@ncaer.org](mailto:indpack@ncaer.org)*

**Railways Revenue Earning Traffic in Net Tonne Kms (Billion) and Rs. Billion**



**Number of Passengers Carried and Average Rate Charged in Paise per Passenger per km by the Railways**



**Employment, Expenditure, Investment & Electrified Route Length of Indian Railways for 2004-05**

Zone	Employment Permanent/ Temporary (000)	Gross Earnings (Rs.in 000)	Working Expenditure (excluding suspense) (Rs. 000)	Gross Expenditure (Rs.000)	Total Investment (Rs.000)	Electrified Route Length (Km.)	Electrified Running Track (Km.)
Central	124757	47101547	39701813	39668672	60357822	1824.82	3650.71
South Eastern	95830	29674459	24782453	24690328	35573620	2157.25	4140.91
Eastern	131513	21742205	33229871	33211269	71944653	1294.31	2594.72
North East Frontier	72685	11739227	18718691	18711595	56748487	NA	NA
North Eastern	63769	9685977	15582914	15705359	39776208	NA	NA
South Central	95009	42037647	35152290	35058811	69816243	1618.78	2973.95
Western	110447	40421844	36721424	36640120	82677521	1448.34	2567.59
Northern	161906	53437930	49639627	49603613	140559817	1049.11	1847.50
Southern	106258	25782081	31141145	31239933	75211756	1342.01	2460.19
East Central	84180	29643225	29316882	29347918	44350496	1439.12	2826.66
East Coast	42312	33122176	20451753	20513227	48856854	1149.36	1718.72
North Central	79039	39308202	26221400	26130711	51161683	1381.67	2639.44
North Western	57669	14561020	15286504	15340791	31747663	NA	NA
South East Central	42722	31828740	17854669	17836535	33440443	1225.01	2248.87
South Western	33654	13170253	11345728	11385519	41093106	156.84	377.92
West Central	60401	27126003	22807913	22504352	43184558	1273.69	2504.08
<b>All Zones Total</b>	<b>1362151</b>	<b>470382536</b>	<b>427955077</b>	<b>427588753</b>	<b>926500930</b>	<b>17360.31</b>	<b>32551.26</b>

Source: Indian Railways Annual Statistical Statements 2004-05