



FICCI Report on

# “Urban Infrastructure: Action Plan” 2014



## Focus Sectors

Urban Water Supply & Waste Water  
Waste Management  
Urban Transport



*Disclaimer:*

*The views expressed in this Report are of the FICCI Urban Infrastructure Committee members only and not of the organisations they represent.*

FICCI Report on  
**“Urban Infrastructure:  
Action Plan” 2014**

**Focus Sectors**

Urban Water Supply & Waste Water  
Waste Management  
Urban Transport









# Content



- 1. Background ..... 03**
- 2. Introduction ..... 04**
- 3. Part I - Urban Water Supply & Waste Water ..... 07**
  - a. Private Operator's Perspective
  - b. Private Sector Participation in Water and Waste Water Sector
  - c. Other Suggestions
- 4. Part II - Waste Management ..... 18**
  - a. Suggestions for PPP in Waste Management
  - b. Use of The National Clean Energy Fund (NCEF) and Need For Reform
- 5. Part III - Urban Transport ..... 23**
  - a. Background
  - b. National Urban Transport Policy
  - c. Steps to be taken by the Government to promote PPP in Urban Transport
- 6. Annexure ..... 29**



# 1

## BACKGROUND

**F**ICCI's Urban Infrastructure Committee had submitted a Report in November, 2011 with a realistic agenda for India's urban sector and suggested last mile solutions to enhance private sector participation. The diverse composition and track record of the committee with representation from the private sector, bilateral and multi lateral institutions, audit, consultancy and the legal and academic fraternity, provided a unique perspective and experience of infrastructure projects in the urban space.

The Committee was unanimous that it should not tread where others have trod but to compile, at the risk of over simplification, a list of to do things which cumulatively would enhance the delivery and quality of urban infrastructure services. The Committee's agenda was modest: highlight some of the obvious deficiencies in the urban infrastructure procurement process, suggest remedies and in the process articulate a blue print of immediate or short term measures as well as longer terms goals.

The Committee's Report was presented to the then Hon'ble Minister for Urban Development, Shri Kamal Nath on November 16, 2011 followed by a wider dissemination in the media.

**G**iven the enormity of the infrastructure deficit in Urban India, the Committee decided, as a next step, to focus on specific infrastructure sectors and identify concrete measures. The current Report focuses on Water, Waste Management and Urban Transport. The aggregate investment envisaged during the 12th Five Year Plan (2012 - 17) for Urban Water Supply is Rs. 108,168 crores, Urban Sewerage and Sewerage Treatment is Rs. 50,780 crores and Urban Drainage is Rs. 24,242 crores. In respect of Urban Transport, it has been estimated that this will require a capital outlay of Rs. 1 lac crores per year, for the next 20 years. Yet, ironically neither at the Centre nor in the vast majority of States is there a nodal office/officer dealing with PPP in these Sectors. The Committee's unanimous recommendation was the creation of empowered government entities both at the Centre and at the States to engage the private sector. The Committee is aware that Water, Waste Management and Urban Transport are all in the State List of the Constitution. It was, however, the unanimous view of the Committee that the Central Government (Ministry of Urban Development) can play a catalytic and pivotal role in formulating appropriate templates for private sector engagements in these critical Sectors. This is essential to curb arbitrary and at times whimsical decision making.

This Report on Urban Water Supply, Waste Water, Waste Management and Urban Transport is specific in its scope of recommendations and identified measures. A menu or wish list in respect of each Sector is articulated based on the hands on experience of the Committee's members. In respect of each Sector and corresponding activity/function the concerned nodal authority at the Central and State Govt. is identified in the Annexure.

The Committee has conceived its mandate as an ongoing dialogue with the Government on the interface between the State and the Private Sector in the urban infrastructure space. The current report on Urban Water Supply, Waste Water, Waste Management and Urban Transport is intended as the first instalment of FICCI's contribution to the debate on urban infrastructure.



Given the criticality of land for any infrastructure development particularly in the urban context, the next report will focus on land management in the urban sector. This is especially relevant in context of the recent "The Right to Fair Compensation and Transparency in Land Acquisition and Rehabilitation and Resettlement Act, 2013".

FICCI's Urban Infrastructure Committee was reconstituted for 2013-14 with the following members:

- Mr. Pradeep Puri, Chairman, FICCI Urban Infrastructure Committee & CEO, IL&FS - METCO Project
- Mr. Sushil Sethi, MD, SPML Infra Ltd.
- Mr. Ranbir Saran Das, MD, Fairwood India Ltd.
- Mr. Sameer Vyas, MD, IL&FS Water Ltd.
- Mr. Mahesh Babu, CEO, IL&FS Environmental Infrastructure & Services Ltd.
- Mr. Piyush Joshi, Partner, Clarus Law Associates
- Mr. Raghu Kesavan, Senior Infrastructure Specialist, The World Bank
- Mr. Anirban Kundu, Senior Sector Specialist (Urban Development), KFW Development Bank
- Mr. Indresh Batra, VC & MD, Jindal ITF Ltd.
- Mr. L Krishnan, MD, IL&FS Urban Infrastructure Managers Ltd.
- Mr. Nitin Raichura, COO, Vishvaraj Infrastructure Ltd.
- Mr. Pradeep Sachdeva, Principal Architect, Pradeep Sachdeva & Associates
- Mr. Y R Nagaraja, MD, Ramky Infrastructure Ltd.
- Prof. Utpal Sharma, Dean, Faculty of Planning & Public Policy, CEPT University
- Mr. Lalit Puri, Sr. Director & BG Head - Prof Lighting Solution, Philips Electronics India Ltd.
- Ms. Soni Shrivastav, AVP - Corporate & Strategic Initiatives, Welspun Energy Ltd.
- Mr. Gulam Zia, National Director - Research & Advisory Services, Knight Frank (India) Pvt. Ltd.
- Mr. Dinesh H Valecha, Director, Valecha Engineering Ltd.
- Mr. Rajesh Srivastava, MD, Meinhardt Singapore Pte Ltd.



- Mr. Shailesh Pathak, President, SREI Infrastructure Finance Ltd.
- Mr. Ramsekhar Manchikalapati, CEO, IPE Global Pvt. Ltd.
- Ms. Mousumi Roy, Sr. Director & Head - Real Estate & Urban Infrastructure, FICCI
- Mr. Abhishek Mehra, Assistant Director, FICCI

# 3

## PART I - URBAN WATER SUPPLY & WASTE WATER

### PRIVATE OPERATOR'S PERSPECTIVE

Looking at the current state of affairs of the Indian urban water and waste water sectors it is imperative to undertake reforms in these sectors. To begin with, as a working philosophy, each urban centre needs to adopt a holistic view of managing its water resources, particularly with reference to supply side efficiencies and management of its available resources. With these measures as mentioned below, the availability and allocation of water including potable water can be made much more efficient. These measures relate to short term as well as to the medium term.

#### Two to Three Year Time Frame:

- i. Refurbishment of existing drinking water supply infrastructure. The primary objective is to reduce technical & commercial losses, reduce operational inefficiencies and expenses. This will include the entire chain starting from intake structures till the last connectivity point
- ii. Improve existing sewage systems and/or install fresh sanitation facilities
- iii. Improve and/or install fresh storm water drainage facilities
- iv. To clean up and revitalize existing/dormant local water bodies viz. ponds, lakes, etc.
- v. To mandate compulsory installations of water harvesting structures
- vi. To finalise a policy framework for Recycling and Reuse of Waste Water for Non Potable uses, including the introduction of dual piping systems
- vii. Finalisation of framework for and appointment of Independent Regulators for PPP projects

**Five Year Time Frame:**

- i. Capital investment for expansion of drinking water and sewage network to cover unmet demand
- ii. To install tertiary treatment and recycling of sewage for non potable use viz. landscaping, industrial use, etc
- iii. Introduce 24/7 drinking water supply system

**PRIVATE SECTOR PARTICIPATION IN WATER AND WASTE WATER SECTOR**

It is recommended that the Ministry of Urban Development, Govt. of India develops the framework for a Model Concession Agreement (MCA) for the water and waste water sector which can be taken as a guiding document for State governments to encourage PPP in this sector. Basically, there are certain risks that need to be addressed appropriately, so that the projects are structured on a bankable basis. The key elements of such a framework are given below:

The following risks are to be addressed from the point of view of bankability and for successful private participation in the water and sanitation projects:

**i. Source Risk:**

The major input for any water supply/water reuse project is continuous supply of water/effluent. The source of water/effluent is usually identified by the Government agencies after conducting due diligence and getting necessary in-principle approvals from the concerned authorities. The broad methodology for earmarking sustainable source of water may be defined. This may include detailed study of regional watersheds. High cost infrastructure has to be put in place for water/effluent treatment which cannot be redeployed and is inextricably linked to the source. The source having been identified by the Government agencies, it is essential that they also provide guarantee on the source. The major guarantees with regard to source would be:

- Availability of water/effluent throughout the year
- Consistent quality of water from the source

The form of guarantees by the Government can be:

- Alternate source identification in case of failure in quantity and quality
- Relief from obligations of the private partner to the extent of source unavailable
- Recourse/compensation to the private partner to the extent of protection of investment in case of source failure

## ii. Demand Risk

The water produced/waste water treated would have a market and have to be supplied either in bulk and/or in retail to the end consumers. In several cases, the end consumers are identified by Government agencies. Any of the following can be the structure for arriving at the saleable capacity and demand projection:

- Fixed output and fixed demand:

In this case, the government agency has fixed the capacity of the plant and the demand by the consumer is also known.

- Fixed output and varying demand:

In this case, the plant capacity is fixed and the consumers are identified but the demand is not known. The private partner assumes the demand requirements to the supply area and fixes a range of demand and its saleability.

- Fixed output and unknown demand:

Even though the capacity of the plant is fixed by the Government/public partner, the consumers may not be identified. It is the onus of the private partner to identify the consumers, market and sell the treated water.

- Varying output and unknown demand:

Here the private partner is brought in to meet the water demand of the users under its jurisdiction and neither the capacity of the plant nor the demand is upfront identified. The capacity is fixed based on the potential demand as identified by the private partner.

Where selling to consumers directly is the responsibility of private partner, this would be a demand risk as the private partner unlike a Government/public partner cannot enforce the purchase of treated water from this facility nor does it have the strength to effect disconnections in the case of default. Usually, in the cases where demand or collection risk is borne by the private sector parties, the following have to be standardized by the Government:

- Water supply on a "take or pay basis" from the Government
- Strong bye laws pertaining to billing, collection, more teeth to the private sector partners, full commitment from the Government for full assistance and support in actual

enforcement/deterrence through disconnection and discontinuation of illegal supply as in the case of the Power Distribution sector under the Indian Electricity Act

- Tariff fixing by Independent Regulator and its enforcement
- Billing and collection responsibilities on behalf of ULB, not in private sector partner's own capacity
- Rights of first refusal on other similar projects in the project area
- Exclusivity to the private partner for selling the treated waste water
- Reduce or stop the supply of water from alternate sources

### iii. Credit Risk

In case of PPP projects, the investment is made upfront by the private sector player. The return on investment to the private partner is either by direct collection of revenues from users and/or annuity payment by the Government agencies. The public sector counter partner could be usually a State Government, ULB or Water/Sewerage Boards, etc. The repayment capacity of each of the Government body would vary and would be dependent on the financial strength and the powers vested to the public agency. To ensure the bankability of a project and also to avail funds at lower interest rates from the lenders, the following are to be addressed:

- Credit rating of the public partner to be at investor grade
- In case of parastatal agencies/boards, the State Government should provide:
  - ❖ Certification for payment capacity of the boards
  - ❖ Guarantee to bridge the gap in case of shortfalls due to change in law or lapses by public partner where the public partner is also responsible for routing the grant of funds from Central/State Government
  - ❖ Insistence to ULB/Government agency to open escrow account wherein it will escrow its identified revenue streams and mark a lien on the account in favour of the private partner
  - ❖ Mortgaging rights to the private partner for assets created
  - ❖ Insistence to provide a revolving Letter of Credit (LoC) for atleast six months of annuity payments with a provision that the letter of credit will be replenished every time the Concessionaire draws the LoC



#### iv. Contract Structure Risk:

The following clauses are to be incorporated in the agreement for any project to be taken up by the private player:

- **Lenders Step in Rights:**

Step-in rights are the rights given to lenders to step in to the project company's position in the contract to take control of the infrastructure project where the project company is not performing. The concession agreement should provide provisions for lenders step in through a substitution agreement for lenders.

- **Termination Payments:**

The termination payments should be acceptable to both the equity investors and the lenders:

- ❖ In case of termination due to Concessionaire Event of Default, the termination payments payable by the Client/Municipal Corporation/Government agency shall be the entire senior and subordinate debt/mezzanine debt deployed in the project.

- ❖ In case of termination due to Client/Municipal Corporation/Government Agency Event of Default and termination due to various Force Majeure events, the termination payments payable by Client/Municipal Corporation/Government Agency shall be the entire Equity along with desired returns, entire senior and subordinate/mezzanine debt deployed in the project.

- **Obligations of the Public Party:**

For ensuring faster implementation and saving on the overall costs for the project, major obligations of the public party like providing block approval to the entire project from all agencies, dealing with land acquisition, encroachments, rehabilitation and resettlement should not be divulged to the private player.

- **Water Tribunal:**

To put-in place mechanisms for water sharing i.e. between rural and urban uses, between riparian states and trying to achieve this without compromising farm sector. A water tribunal to be formed by the Central (or concerned?) government for speedy and equitable disposal of any disputes arising between parties.

**v. Pricing and Tariff Structuring:**

In India, municipal entities currently collect user charges for services such as urban transport, water, wastewater and solid waste management. However, in most cases (except urban transport) user charges are not directly linked to the extent of usage or consumption. Also, user charges often do not reflect the actual cost of providing services. Poor collection efficiencies of urban local bodies further worsen this situation.

ULBs can manage this risk by adopting strategies such as cross subsidization of core services (where scope of levying higher user charges remains limited) by innovative project structuring wherein financially unviable services could be bundled with projects with higher revenue generating opportunities to ensure that the overall transaction is financially attractive for the private developers.

Further, arriving at the challenge price for the selection of a private partner should be clear from any ambiguity to ensure that the pricing is based on uniform assumptions. Else, comparison of bids becomes difficult and skewed if the project contours are not fixed for bidding.

Generally, water supply/water reuse projects have two cost elements. Capital cost for capacity creation which is usually one time and recurring operational costs. Hence, the pricing and/or tariff can be as a two-part structure:

- **Fixed Charge:**

Periodic payment without escalation towards capital cost recovery including construction and financing cost. Such fixed charge shall be on a take or pay basis.

- **Variable Cost:**

Recurring operational costs which can be linked to actual off take with a built-in escalation provision for cost escalation, usually linked to a predetermined price index.

This structure will ensure that the costs of the project are stacked appropriately.

Tariff setting, should be the responsibility of ULB/public utility or an Independent Regulator. Whenever tariffs are raised, the responsibility of its enforcement and management of the consequent law and order situation has to be ensured by the Government/Public Authority.

One of the key performance indicators for measuring efficiency improvements is Non Revenue Water (NRW). Since, utilities often do not comprehensively maintain past data of existing consumers, the targets set for efficiency improvements by private partners should be realistic and achievable, based on penalty & incentive based structures.

#### vi. Design Risk:

The selection of suitable technology by a private player for a project would be based on the Detailed Project Report (DPR) or technical specifications provided by the public agency. The private partner would be responsible for the detailed design and engineering based on the specifications and where no flexibility in design is allowed, the private sector participation would be curtailed. The risk to the private sector partner lies in the difficulty in implementation of such designs, difference in design specifications and actual ground conditions:

- Compensation for time and cost overrun due to variation in scope
- Offer design flexibility to optimize the cost, time, operability

PPP Projects are often bid out on the basis of DPR estimates prepared by the public utility. However, since large components of the water assets are underground, quite often, the actual rehabilitation works by the PPP operator in distribution projects to meet the Key Performance Indicators (KPIs) far exceed the estimates initially prepared by the utility. Mechanisms need to be formulated for transparently arriving at the increased capital investment required and its treatment in a post bid scenario.

Having a MCA would ensure that the projects are structured correctly with fair risk apportionment between the public and private sectors. Also, the expectations from the private sector would be balanced and the modality of PPP can be decided based on the objectives to be achieved and the risk sharing appetite.

The Ministry of Urban Development, Government of India could also incentivize the State Governments for using the above template by linking it to the various instruments of financial assistance to the state governments. For example, JNNRUM funding could be linked to the adoption of such a MCA.

### OTHER SUGGESTIONS

1. **Capacity Building** - These sectors are largely handled by the public sector in a typical way over the years. Reduction of water losses was never a priority. There is a need to relook at the sector from entirely different perspective of "water loss reduction" and providing "service to the consumers". Similarly, there are no capacities available in the private sector as well. It will need few projects under PPP and some time before Indian companies acquire such skills. Till such time, foreign companies who have vast experience of the sectors need to be motivated to handle the projects. All the stakeholders have to understand the compulsions and prepare a conducive environment so as to motivate multi nationals to participate in the bidding process.

The capacity deficit in ULBs can be addressed to some extent by appointment of professional transaction advisors. ULBs often lack resources needed for appointment and management of transaction advisors for purpose of project development and transaction management. A project development facility that provides project sponsors the resources to procure consultancy and expert services for conducting pre-feasibility studies and assessments may address this limitation to a large extent. PPP Units have been set up by some states to address the project development related capacity constraint of ULBs; for e.g., Tamil Nadu Urban Development Fund (TNUDF) in Tamil Nadu, Infrastructure Development Corporation (Karnataka) Ltd. (I-Deck) in Karnataka, PDCOR in Rajasthan, Gujarat Infrastructure Development Board (GIDB) in Gujarat, and Maharashtra Urban Infrastructure Development Corporation Ltd. (MUIDCL) in Maharashtra. These institutions have addressed the gap with varying levels of success and learnings may be drawn from the same.

2. **Existing institutional framework lacks Urban-PPP focus**-There is an elaborate institutional framework at the national level that provides funding for PPP projects in water supply, waste water and sewerage. At one end, there are programs/institutions that focus on urban infrastructure, such as the JNNURM program. At the other end, there are programs/institutions that focus on PPP projects across sectors, such as VGF, IIFCL, IFC, ADB PSOD, KfW and Commercial Banks.

However, none of the existing programs/institutions at the national level focus exclusively on PPP in these sectors. Whereas, JNNURM emphasises on PPP projects, but by design, the program does not exclusively focus on PPP. At the same time, IIFCL and VGF are multi-sectoral programs, and by design, they do not focus exclusively on urban infrastructure.

In order to make a lasting impact on the sector, it is crucial that some **national level agency or programme/scheme** addresses the constraints facing water supply and waste water sectors by supporting ULBs in developing and structuring bankable projects through project development and capacity building roles. This is because, whereas, ULBs that are beneficiary of the national level programme/scheme will directly benefit through development of bankable PPP projects, other ULBs in the country will benefit from generation of knowledge on development of bankable PPP projects and development of pilot projects based on innovative project structures.

Ministry of Urban Development, Govt. of India and KfW started exploring options for setting up a specialized, **national level Public Private Partnership-Urban Infrastructure Funding Facility (PPP-UIF)** on the lines of the TNUDF, which has been successfully operating at a state level for many years.

The objective of the PPP-UIF Facility is stimulation of urban infrastructure development through PPPs. The related projects may be conceived to stimulate private finance for

infrastructure development, however, the private component in the PPP structure can be covered through the outsourcing of operational and/or management responsibility to private partners. Hence, the PPP-UIF Facility will not only help implementing additional urban infrastructure but will in particular ensure sustainability and adequate level of services during life cycle.

3. **Educating the Stakeholders** - During the project bidding and implementation stage the operator faces lot of resistance from all the stakeholders. Privatization of water supply sector, multinational company making business of sensitive commodity like water, staff of the client, etc, are all burning issues that an operator has to face. There is need to institutionalise the process and also an awareness campaign at all levels is required. The true facts need to be put in front of the common people. Some of the facts that need to be highlighted are:
  - i. No additional water is needed for 24x7 water supply scheme. The reduction in water losses generates enough water for providing continuous water supply. 24x7 is a pressurised system that also prevents infiltration of sub-soil pollutants into the water networks.
  - ii. The sovereign rights of the client like tariff setting, providing new connections and disconnections remains with the ULB/public utility or an Independent Regulator.
  - iii. Further, it is preferable if the private operator raises bills and collects revenues on behalf of the public authority and in return gets a fee for its services, which is linked to efficiency of billing and also of collection. The private operator's fees should ideally be delinked from the actual water tariff being charged from the consumers<sup>1</sup>.
  - iv. The operator's main role is to provide the service of reducing water losses and also to provide continuous and pressurized quality water supply
  - v. The ownership of the assets always remain with the client
  - vi. Human Resource Management Guidelines and Frameworks may be formulated for the management of existing employees of the Utilities post privatisation.
4. **Setting up a Central Level Panel of "Water PPP Project - Preparatory Technical Consultants"** - This panel should be set up by the Ministry of Urban Development, Govt. of India for carrying out preparatory work, basic investigations, design, GIS, network modelling and baseline exercise work.

---

<sup>1</sup>For example, in distribution projects, the Operator's performance could be measured on percentage basis i.e.  $(\text{Volume of Water Billed} / \text{Volume of Water supplied}) \times (\text{Amount in Rupees Collected} / \text{Amount in Rupees Billed})$

ULBs generally appoint Transaction Advisors (TA) and/or Consultants for preparing Detailed Project Reports (DPR). Preparation of DPR is a totally different activity than the activities mentioned above which are required to be performed for a "reliable & authentic" baseline data generation. Thus, a TA and DPR consultants generally neglect/give less importance to the basic preparatory investigation work. The following will be the salient features of this panel:

- i. Separate panels for different categories of the Cities/towns e.g. Municipal Corporations, Municipal Councils, Class A, B ... cities, etc. should be set up
  - ii. States can prioritise the cities / towns to be taken first (already many states have prioritised this)
  - iii. The consultants will develop authentic data which will reduce many risks assumed by the proposed PPP Operators
  - iv. Their fees can be paid by the MoUD as part of the JNNURM / UIDSSMT projects
  - v. There has to be a fixed time frame for this exercise
  - vi. The 'Willingness to Pay' survey must be done by the Consultants and properly publicised before any bidding starts
  - vii. 'Acceptance of metering' survey and awareness generation must be part of the scope of the Consultant's work.
5. **Contracting Operations & Maintenance (O&M) Services:** Another model for attracting private sector participation in the sector is in the area of contracting O&M services. Even here there has to be some level of standardization for attracting private companies. The key element in this regard is the technical criteria for eligibility and qualification. As of now, except one Indian company, no other domestic entity has any experience in the O&M of a water utility. These include the areas of:
- i. Experience in implementation of reductions in Non Revenue Water for a minimum number of connections;
  - ii. Transforming an intermittent water supply system to a continuous water supply system for a minimum number of connections; and
  - iii. Experience in commercial operations of a water system - metering, billing, collection and customer services through IT support



While it is essential that credible companies are brought into this framework for providing services, the global experience itself for such services is limited to Western Europe (France, Iberian Peninsula and UK) and through them in other parts of Latin America, sporadically in Africa and to some extent in South East Asia. Similarly, there are a few companies located in Malaysia and Philippines that have been entrusted with O&M of water utilities. Many of these smaller locally based companies do not have the interest or appetite to go in for international investments/participation due to their own circumstances. Therefore, the field is limited to very few companies.

It should be the endeavour of the Govt. of India and State Governments to develop local experience in this field. Therefore, through the mechanism of joint ventures and consortiums, Indian companies should be encouraged to participate in such contract management programs. For this, the eligibility technical criteria should be based on realistic and pragmatic terms, so that while maintaining minimum standard of quality, the range of competition should be as wide as possible.

Again, the Government of India could use its assistance programs to leverage the principles of wide competition in this nascent area of participation by the private sector in the refurbishment, operations and maintenance of water utilities in India.

# 4

## PART II - WASTE MANAGEMENT

### Suggestions for PPP in Waste Management

For the promotion of PPP in waste management sector, the following suggestions be considered:

1. Land and environmental clearances for waste management projects sites to be provided by the concerned Government/Municipality;
2. Guidelines for standard tendering and concession models with focus on O&M be formulated;
3. Indigenous technologies for processing waste be developed. Focus should be on developing such technologies that are suitable for processing that categories of waste which is generated in Indian cities;
4. Adopt an Integrated Waste Management approach under which the focus should be on "Reuse & Recycle" of all possible waste streams;
5. Payment certainty for private sector operators: Bill discounting mechanism for bills approved by Municipality;
6. Formulation of guidelines and outlay for legalized Construction & Demolition (C&D) debris disposal system;
7. For encouraging waste management projects and products, grant of tax exemptions/incentives be considered. Excise and VAT exemption be provided for products made from recycling C&D waste. There is a precedent as compost made from recycling biodegradable Municipal Solid Waste (MSW) is eligible for such benefits;

8. Tax exemption on Clean Development Mechanism (CDM) income be made available. Currently, CDM income is taxed which defeats the additionality requirement of CDM projects;
9. To ensure sustainable operations of waste management projects, a waste management fee be charged along with utility bills of electricity, water, etc. as in Jaipur;
10. Incentivize the output based milestones and subsidize Fertilizer Control Order (FCO) compliant compost made from recycled MSW;
11. Implement recommendations of the Integrated Plant Nutrient Management report of Ministry of Urban Development, Govt. of India:
  - a. Transport subsidy;
  - b. Mandatory co-marketing of compost with chemical fertilizer in ratio of 4:6/3:7;
12. A penalty based mechanism should be framed to ensure compliance in a PPP project in MSW management;
13. A preferential tariff of say Rs. 9-10 /KWH for energy generated from waste to energy plants be fixed. Preferential tariff was provided for solar power generation projects initially;
14. A constraint in implementation of PPP projects in solid waste management sector is the small scale of projects which limits their commercial viability.

One of the means of creating sizeable projects may be bundling of various municipalities together with a nodal agency, which can take key decisions related to the project.

To summarise, we need a paradigm shift to ensure processing of waste. The key output based incentives could include:

- Electricity Tariff for Waste to Energy plants at Rs.9-10 per kWh,
- Marketing support of Rs. 2630 per Ton of compost through fertilizer companies,
- Tax exemptions (Excise, VAT) for C&D waste processed products.

The Waste Sector has the highest positive externalities Environmental - Soil, Water and Air Quality, Social and Health indicators with inter generational benefits. Solid Waste Management to be taken up on a 'National Mission' basis.

## USE OF THE NATIONAL CLEAN ENERGY FUND (NCEF) AND NEED FOR REFORM

### Background

The establishment of the National Clean Energy Fund ("NCEF") was announced as part of the Union Budget 2010-11. The Finance Act, 2010, which gave effect to the Union Budget for the financial year 2010-11, provides the legislative basis for the levy of the clean energy cess and specifies that it is for the "*purposes of financing and promoting clean energy initiatives, funding research in the area of clean energy or for any other purpose relating thereto*". The Finance Act, 2010 also specifies that the cess is for the purpose of the Union Government only and its proceeds shall not be distributed to the States.

The NCEF has been established as a non-lapsable fund under the public accounts and its secretariat is in the Plan Finance II Division, Department of Expenditure in the Ministry of Finance. To operationalise the NCEF, the Ministry of Finance, Govt. of India has approved guidelines for appraisal and approval of projects and schemes eligible for financing under the NCEF ("NCEF Guidelines"). The Guidelines specify that the NCEF funds can be accessed by projects which are:

1. Sponsored by a Ministry or Department of the Government of India, and
2. Submitted by organisations (individually or in consortium) from the government / public / private sector, in the form of loan or viability gap funding, as is deemed fit on case to case basis.

Participating organisations are required to provide a minimum financial commitment of 40%, and the Government assistance under the NCEF is mandated not to exceed 40% of the total project cost. Projects that are receiving funds from any other arm of the Government of India, or from any other national or international body, are ineligible to apply for funding from NCEF.

The Guidelines specify an indicative list of projects eligible for funding. They specifically mention renewable energy projects such as solar, wind, geothermal and tidal energy. However, there is no mention of solid waste or 'waste-to-energy' projects. Projects in the solid waste management sector and waste-to-energy projects could potentially be covered under the following general provisions of the guidelines:

- *Projects which result in replacing existing technology in energy generation with more environmentally sustainable approach;*
- *Projects related to environment management particularly in the geographical areas surrounding the energy sector projects.*

However, there has been no approval for municipal waste management projects as per the available information. It is informative to note that NCEF funds have been used for "Remediation of Hazardous Waste Dump Sites". This was initiated by the Ministry of Environment and Forests in respect of environmentally sound remediation of contaminated sites and to support the development and implementation of methodologies.

#### **Allocations from the NCEF and Utilisation so far**

The estimated budgeted amount for the financial year 2012-13 in the NCEF is Rs. 3,864 crores. In 2011-12, while the budgeted amount for it was Rs. 3,480 crore, it was revised downwards to Rs 3,249 crore<sup>2</sup>. The India Economic Survey for 2011-12 estimates that by 2015, an amount of Rs. 10,000 crores will be generated from the clean energy cess on coal<sup>3</sup>. However, it has been estimated that the funds from the NCEF have been underutilized and that out of the Rs 8,200 crores that has been collected under NCEF, the disbursement has been about one-eighth of that only<sup>4</sup>.

A study assessing the implementation of the NCEF has identified several bottlenecks in the manner of its operation<sup>5</sup>. Its findings are that in the first three meetings of the IMG, nearly half of the proposals appraised by the IMG were either rejected or not approved in their entirety as they were found ineligible. The study also highlighted some of the key concerns with regard to the implementation of the NCEF as follows:

1. The mechanism for NCEF is being used more for meeting budgetary deficits, than for funding projects that align with NCEF's objectives;
2. Though the NCEF Guidelines provide that only 40% of the financial support will be given by NCEF, but approved funding has exceeded 40% in some cases;
3. The underutilization of the NCEF suggests that the sponsoring ministries lack the capacity to develop quality proposals consistent with NCEF Guidelines;

---

<sup>2</sup>PiyaliMandal, "Clean energy fund swells to Rs 3,864 cr", Business Standard, March 22, 2012, available at <<http://business-standard.com/india/news/clean-energy-fund-swells-to-rs-3864-cr/468651/>>

<sup>3</sup>Chapter 12, "Sustainable Development and Climate Change", Economic Survey 2011-12

<sup>4</sup>Amit Kumar, Clean Energy Fund headed nowhere, Business Line, The Hindu, October 31, 2012 available at <http://www.thehindubusinessline.com/opinion/clean-energy-fund-headed-nowhere/article4051259.ece>

<sup>5</sup>Gyan Ranjan Panda, Narendra Jena, "Evaluating the Performance of the National Clean Energy Fund", EPW, September 15, 2012

4. No steps have been taken by the IMG regarding operationalisation of the monitoring and accountability mechanisms; and
5. There has been no involvement from the private sector so far, which reflects limited private sector awareness, which in turn is perhaps indicative of the limited measures taken by sponsoring ministries to attract private partners.

It is also relevant to note that a group of young Parliamentarians are reportedly seeking a review of the NCEF mechanism, and are requesting for creation of a corpus under the NCEF for providing risk guarantees for all renewable energy projects (irrespective of technology used)<sup>6</sup>.

### **Recommendations**

The NCEF's broad objective is that it should be used for the *purposes of financing and promoting clean energy initiatives, funding research in the area of clean energy or for any other purpose relating thereto*. This provides significant potential for investment and use of funds across a wide range of clean energy projects. In practice however, two fundamental problems have acted as bottlenecks for effective and innovative use of the NCEF funding: (i) its severe underutilization; and (ii) the highly bureaucratic process that has resulted in processes that have resulted in its underutilization.

Radical reform is therefore required to the manner in which the NCEF is administered. It can be used to provide the impetus for development, incubation, and promotion of renewable/clean energy technologies. In this regard, this group would like to highlight the urgent need to utilize NCEF funds to provide much needed financial capital for MSW and waste-to-energy (WtE) projects. WtE projects serve a dual role of waste disposal and energy production, and present significant benefits in ensuring waste management, energy and metals recovery, and reduction of GHG emissions. Funding support to encourage use of innovative technologies and maximize its potential is therefore crucial in order to achieve India's dual objectives of energy security and low-carbon economic growth.

---

<sup>6</sup>“Young Parliamentarians to ask PM to review clean energy fund policy”, Business Line, 14 November 2012, available at <[http://www.thehindubusinessline.com/industry-and-economy/economy/young-parliamentarians-to-ask-pm-to-review-clean-energy-fund-policy/article4095098.ece?homepage=true&ref=wl\\_home](http://www.thehindubusinessline.com/industry-and-economy/economy/young-parliamentarians-to-ask-pm-to-review-clean-energy-fund-policy/article4095098.ece?homepage=true&ref=wl_home)>



## 5

## PART III - URBAN TRANSPORT

**T**wo recent independent studies by McKinsey and the High Powered Expert Committee (Ministry of Urban Development, Govt. of India) have indicated that for the next 20 years, 50% of total urban development funds will have to be earmarked for urban transportation. This amounts to a capital outlay of **Rs. 1 lakh crores per year**.

*It is, therefore critical that we exercise the care that is required to utilise these massive funds effectively and efficiently with the requisite checks and balances in place to ensure optimised results. For this purpose, an “Urban Transport Mission”, on the lines of the National Solar Mission (announced by the Ministry of New & Renewable Energy, Govt. of India), would be welcome.*

**VISION**

To craft and develop an Urban Transport Mission urgently which will reflect the dynamism of the modern changing world in the foreseeable future where public transport is the preferred choice of citizens.

**MISSION**

To have a safe, convenient, integrated, affordable and clean public transport system available in India's urban environment.

**OBJECTIVES**

The key objectives are:

1. It is imperative to define a lucid and precise **Urban Transport Mission** for the country.
2. Asses the **Cost of Congestion** in order to appreciate the loss to the nation.
3. **Define a Road Safety Policy** to reduce fatalities and injuries. We must have the vision to move towards a "Zero Death" situation on our roads. The social cost of road deaths would be in the region of 1-3 % of a nation's GDP as per World Health Organisation estimates.

4. **Mandatory implementation** where possible of urban transport guidelines.
5. **Financial assistance** - Viability Gap Funding (VGF), soft loans and Lines of Credit (national & international)
  - i. Incentives for implementation.
6. **Stiff penalties** for non / poor implementation
  - i. Mechanism for monitoring above to be in place.
7. **New City Development Control Regulations** must factor in the "new" dynamics of urban mobility requirements, by creating and implementing, new development guidelines. These should be mandatory requirements for both public, PSU, and private sector developments.
8. **Elevated Corridors:** Low air spaces have the requisite Right of Way (ROW), are inexpensive and these are grossly underutilised in India. Barring a few MRT, LRT and Monorail projects, we have nothing of significance. Urban spaces are growing and road availability is shrinking, becoming expensive and leading to deteriorating air quality by adding fossil fuel burning motorised vehicles. Last-mile-connectivity / feeder service must be actively promoted and emphasised to facilitate and encourage use of public transport. Eco friendly automated transit network systems which use elevated guideways must be stimulated in our Transport Policy. Examples of these (apart from rail) are:
  - i. Personal Rapid Transit (PRT) System
  - ii. Elevated walkways, with or without Travellators to encourage walking
  - iii. Elevated roads (not flyovers) with BRT corridors wherever possible (an elevated road over the existing ring railway around Delhi with a BRT corridor, could effectively move millions of passengers each year resulting in significantly reducing pollution and alleviating road congestion).
9. **Smart Systems:** Use of Intelligent Transport Systems (ITS) and IT technology must be integrated. These include the use of Smart cards, GPS, Digital Congestion Charging System (Electronic Road Pricing - ERP, highly successful and financially viable in Singapore), signalling and parking,
10. **Parking:** Park-and-ride facilities must be embedded into the fabric of urban transportation. These would include multi-level-car-parking facilities at strategic locations.
11. **Encourage Private Sector Participation**
  - i. Govt. has decided to "support" feeder services such as Monorail and modern trams for feeder services. Other state-of-art transport solutions, such as PRT need also to be

supported by innovative financial structuring (VGF, fare subsidy, soft loans and property development rights).

- ii. Just as in the Central Metro Acts, Metro Railways (Construction of Works) Act, 1978 and Metro Railways (Operation & Maintenance) Act, 2002, there should be equivalent legal framework for other transportation networks such as PRT and BRT. This would facilitate project implementation without getting embroiled in lengthy procedures and permissions.

## **National Urban Transport Policy**

The National Urban Transport Policy 2006 encourages "associating the private sector in activities where their strengths can be beneficially tapped".

### **Opportunities for PPP in Urban Transport**

1. Implementation, Operations & Maintenance of Public Transport Systems
2. Construction & Maintenance of Urban Roads
3. Intelligent Transport System (ITS) provisioning , Operations & Maintenance
4. Development of bus depots, terminals, bus stations, workshops with property development
5. Development, Operations and Maintenance of street furniture through advertisement revenues
6. Implementation, Operations & Maintenance of Intermediate Public Transport
7. Implementation , Operations & Maintenance of parking spaces
8. Implementation , Operations & Maintenance of Public Bicycle Sharing Schemes

### **Constraints in the development of PPP projects in Urban Transport**

1. Fragmented decision making due to involvement of multiple public agencies
2. Inadequate project development and structuring - need for project development funds, standard bid documents, model concession agreements, tool kits, etc
3. Regulatory constraints - unclear regulatory procedures and processes
4. Financial constraints- budgetary limits and unwillingness to apply and/or increase user charges
5. Capacity constraints in Public Sector - lack of capacity to conceptualize, plan, structure, evaluate and close PPP projects both at state and central level

## Steps to be taken by Government to promote PPP in Urban Transport

### 1. Setting up of Unified Metropolitan Transport Authorities (UMTA) in all cities with a population of more than 1 million

The formation of UMTA would help coordinating the planning and implementation of urban transport programmes in an integrated manner. UMTA should be formed with legislative backing and have powers to raise revenues. International examples of such agencies are Transport for London (TfL) and Land Transport Authority (LTA) in Singapore. Some cities in India have made a beginning and have formed UMTA through legislation (Hyderabad and Chennai)

The UMTA can act as the nodal agency for identifying, conceptualising and structuring PPP initiatives in the city in the area of urban transport. All capacity building initiatives should be focussed to strengthen the institution of UMTA.

The Secretary, Ministry of Urban Development, Govt. of India had, on 12 May 2008, written to all State Chief Secretaries informing that the National Urban Transport Policy 2006, envisaged setting up of UMTA in all million plus cities. The purpose was to coordinate planning and coordination of all urban transport projects.

Suffice it to say that UMTA has not really received the impetus that was envisaged. The reasons for these needs to be ascertained, corrective measures to be taken and UMTA be given the fillip it requires. Without this coordinated approach, urban transport projects are likely to be weak in implementation.

### 2. Creation of Dedicated Urban Transport Funds both at the Centre and States

There is a need to ring fence resources required to provide VGF for urban transport projects as also fund project development activities that will ensure a robust and bankable pipeline of PPP projects. Dedicated Urban Transport Funds on the lines of the Central Road Fund can meet the funding requirement. The Working Group on Urban Transport for 12th Five Year Plan has identified a surcharge on petrol, green cess on existing personal vehicles and tax on purchase of new vehicles as possible sources of financing the Funds. States like Rajasthan and Karnataka have created similar kind of funds.

The dedicated urban transport fund at the Centre can be administered by the Ministry of Urban Development and the funds used primarily for viability gap funding and other

urban transport projects which are not amenable to private sector participation. The urban transport fund at the State level should be used primarily as a project development fund to prepare a pipeline of bankable PPP projects in urban transport as also provide State's contribution to the viability gap funding.

### **3. Enabling PPP in Operations & Maintenance of city bus services**

Globally, the trend in city bus services is to separate planning and operations function. While the public authority plans service parameters and monitors performance, the private sector operates the bus service under a contractual arrangement. In India, the State Transport Undertakings continue to both plan and operate the bus service leading to poor quality of service, technology degradation and sub optimal processes and systems.

Though a beginning has been made with induction of private operators in Bhopal, Ahmedabad and Bhubaneswar much more needs to be done to encourage private sector participation in operations of city bus services. There is a need to recognize that providing quality public transport services is a public service which cannot be sustained by fare box revenues alone. Therefore, the demand (revenue) risk needs to be assumed by the Government.

Development of a robust contracting model for city bus operations with focus on service and quality and preparation of related contract documents is a pre-requisite for enabling PPP in operations & maintenance of city bus services.

PPP in city bus services will lead to introduction of modern buses, technology up gradation in the form of real time passenger information systems, customer service orientation, quality improvement etc.

### **4. Formulation of a User Charge (Fare) Policy**

Public Transport in India is characterised by low user charges which are not sufficient to recover even the O&M costs let alone the capital costs. There is a need to frame a policy that clearly defines the mechanism for revision of fares, periodicity of revision, compensation against social concessions and adjustment for externalities such as congestion, pollution, accidents, etc. A transparent fare policy will to a large extent mitigate the revenue risk associated with urban transport projects and encourage private sector participation.

## **5. Providing Status of Infrastructure Projects to all Public Transport Projects**

Public transport has been recognized as biggest contributor in reducing environment pollution and should be promoted through taxation policies. Therefore, it is necessary to enhance the definition of 'Infrastructure Projects' to include all public transport projects and not just limited to urban rail projects. The tax benefits combined with accessibility to working capital and long term funding will attract more private sector participation and contribute to the growth of public transport in the country.

## **6. Legal and Regulatory Framework**

At present, there is no single legislation which comprehensively covers all regulatory and legal aspects of urban transport projects. As such, multiple acts impinge upon the domain of urban transport making it difficult for the private sector to assess regulatory and legal risk. A comprehensive urban transport act will help bring clarity to the regulatory and legal framework and encourage private sector participation.

At present, urban transport is a State subject and there is a need to bring it to the Concurrent list.

Major gaps exist which do not encourage private sector participation:

- a) Legal, regulatory and institutional frameworks limit ability to tap financial markets sufficiently at competitive borrowing and repayment capacities.
- b) Need to embrace regulatory guidelines to encompass the areas of newer technology - intelligent, sustainable, etc. Current regulatory frameworks are antiquated and do not recognise the latest technologies that are being adopted worldwide.
- c) Need to establish unified nodal agencies mandated with the task of appraisal and approval of urban transport projects.

### RECOMMENDATIONS FOR THE INDIAN URBAN INFRASTRUCTURE SECTOR

S. No.	Recommendation	Concerned Department
<b>URBAN WATER SUPPLY &amp; WASTE WATER SECTOR - PRIVATE OPERATOR'S PERSPECTIVE</b>		
<b>1.</b>	<b>Short Term Measures - Two to Three Year Time Frame</b>	
1.a.	Refurbishment of existing drinking water supply infrastructure	Municipality/Water Board
1.b.	Improve existing sewage systems and/or install fresh sanitation facilities	Municipality/Sewerage Board
1.c.	Improve and/or install fresh storm water drainage facilities	Municipality/Sewerage Board
1.d.	To clean up and revitalize existing/dormant local water bodies viz. ponds, lakes, etc.	Municipality/Water board
1.e.	To mandate compulsory installations of water harvesting structures	State Urban Development Dept.
1.f.	To finalise a policy framework for Recycling and Reuse of Waste Water for Non Potable uses, including the introduction of dual piping systems	State Urban Development Dept.
1.g.	Finalisation of framework for and appointment of Independent Regulators for PPP projects	State Urban Development Dept.
<b>2.</b>	<b>Medium Term Measures - Five Year Time Frame</b>	
2.a.	Capital investment for expansion of drinking water and sewage network to cover unmet demand	Municipality/Water Board/Sewerage Board
2.b.	To install tertiary treatment and recycling of sewage for non potable use viz. landscaping, industrial use, etc	Municipality/Sewerage Board
2.c.	Introduce 24/7 drinking water supply system	Municipality/Water Board
<b>3.</b>	<b>Model Concession Agreement for Water and Waste Water Sector</b>	Additional Economic Advisor, Ministry of Urban Development (MoUD) Govt. of India

<b>4.</b>	<b>Other Suggestions</b>	
<b>4.a.</b>	Capacity Building: The capacity deficit in ULBs can be addressed to some extent by appointment of professional transaction advisors. ULBs often lack resources needed for appointment and management of transaction advisors for purpose of project development and transaction management. A project development facility that provides project sponsors the resources to procure consultancy and expert services for conducting pre-feasibility studies and assessments may address this limitation to a large extent. PPP Units have been set up by some states to address the project development related capacity constraint of ULBs.	State Urban Development Dept. OR State Finance Commission
<b>4.b.</b>	Existing Institutional Framework lacks Urban-PPP Focus: In order to make a lasting impact on the sector, it is crucial that some <b>national level agency or programme/scheme</b> addresses the constraints facing water supply and waste water sectors by supporting ULBs in developing and structuring bankable projects through project development and capacity building roles.	Director (Capacity Building for Urban Development Project) - JNNURM, MoUD, Govt. of India
<b>4.c.</b>	Educating the Stakeholders	Municipalities
<b>4.d.</b>	Contracting Operations & Maintenance (O&M) Services	Municipalities
<b>WASTE MANAGEMENT</b>		
<b>1.</b>	Land and environmental clearances for waste management projects sites to be provided by the concerned Government/ Municipality	State Environment Dept. and State Revenue Dept.
<b>2.</b>	Guidelines for standard tendering and concession models with focus on O&M be formulated	Director (Public Health Engineering), MoUD, Govt. of India
<b>3.</b>	Indigenous technologies for processing waste be developed. Focus should be on developing such technologies that are suitable for processing that categories of waste which is generated in Indian cities	State Urban Development Dept., Environment Dept. and Municipality/Sewerage Board
<b>4.</b>	Adopt an Integrated Waste Management approach under which the focus should be on "Reuse & Recycle" of all possible waste streams	Director (Public Health Engineering), MoUD, Govt. of India
<b>5.</b>	Payment certainty for private sector operators: Bill discounting mechanism for bills approved by Municipality	Municipality
<b>6.</b>	Formulation of guidelines and outlay for legalized Construction & Demolition (C&D) debris disposal system	State Urban Development Dept. and State Environment Dept.
<b>7.</b>	For encouraging waste management projects and products, grant of tax exemptions/incentives be considered. Excise and VAT exemption be provided for products made from recycling C&D waste.	Ministry of Finance, Govt. of India
<b>8.</b>	Tax exemption on Clean Development Mechanism (CDM) income be made available.	Ministry of Finance, Govt. of India
<b>9.</b>	To ensure sustainable operations of waste management projects, a waste management fee be charged along with utility bills of electricity, water, etc. as in Jaipur	State Urban Development Dept.



10.	Incentivize the output based milestones and subsidize Fertilizer Control Order (FCO) compliant compost made from recycled MSW	Dept. of Fertilizers, Govt. of India and Ministry of Finance, Govt. of India
11.	Implement recommendations of the Integrated Plant Nutrient Management Report of Ministry of Urban Development, Govt. of India	State Urban Development Dept.
12.	A penalty based mechanism should be framed to ensure compliance in a PPP project in MSW management	State Urban Development Dept.
13.	A preferential tariff of say Rs. 9-10 /KWH for energy generated from waste to energy plants be fixed.	State Urban Development Dept.
14.	A constraint in implementation of PPP projects in solid waste management sector is the small scale of projects which limits their commercial viability. One of the means of creating sizeable projects may be bundling of various municipalities together with a nodal agency, which can take key decisions related to the project.	State Urban Development Dept.
<b>URBAN TRANSPORT</b>		
1.	Setting up of Unified Metropolitan Transport Authorities in all cities with a population of more than 1 million	State Transport Dept. and State Urban Development Dept.
2.	Creation of dedicated Urban Transport Funds both at the Centre and States	Central - Joint Secretary (Urban Transport) and OSD (Urban Transport), MoUD, Govt. of India State - Transport Dept., Finance Dept. and Urban Development Dept.
3.	Enabling PPP in Operations & Maintenance of City Bus Services	State Transport Dept. and State Urban Development Dept.
4.	Formulation of a User Charge (Fare) Policy	State Transport Dept. and State Urban Development Dept.
5.	Providing the status of Infrastructure to all Public Transport Projects	Ministry of Finance, Govt. of India
6.	Legal and Regulatory Framework	Central - Joint Secretary (Urban Transport) and OSD (Urban Transport), MoUD, Govt. of India State - Transport Dept. in consultation with State Urban Development Dept.











## **About FICCI**

Established in 1927, FICCI is one of the largest and oldest apex business organizations in India. FICCI's history is closely interwoven with India's struggle for independence, industrialization and emergence as one of the most rapidly growing global economies. FICCI has contributed to this historical process by encouraging debate, articulating the private sector's views and influencing policy.

A not-for-profit organization, FICCI is the voice of India's business and industry.

FICCI draws its membership from the corporate sector, both private and public, including MNCs; FICCI enjoys direct and indirect membership of over 2,50,000 companies from various regional chambers of commerce and through its 70 industry association. FICCI provides a platform for sector specific consensus building and networking and is the first port of call for Indian industry and the international business community.

### **Our Vision**

To be the thought leader for industry, its voice for policy change and its guardian for effective implementation.

### **Our Mission**

To carry forward our initiatives in support of rapid, inclusive and sustainable growth that encompasses health, education, livelihood, governance and skill development.

To enhance the efficiency and global competitiveness of the Indian industry and to expand business opportunities both in domestic and foreign markets through a range of specialized services and global linkages.

### **Contact us:**

#### **Ms. Mousumi Roy**

Sr. Director & Head - Real Estate & Urban Development  
Federation of Indian Chambers of Commerce & Industry (FICCI)  
Federation House, 1, Tansen Marg, New Delhi - 110001  
Tel: +91-11- 23487272 / 23487362 / 23765318  
Fax: +91-11-23765333, Email: [housing@ficci.com](mailto:housing@ficci.com)