

Delhi-Mumbai Industrial Corridor

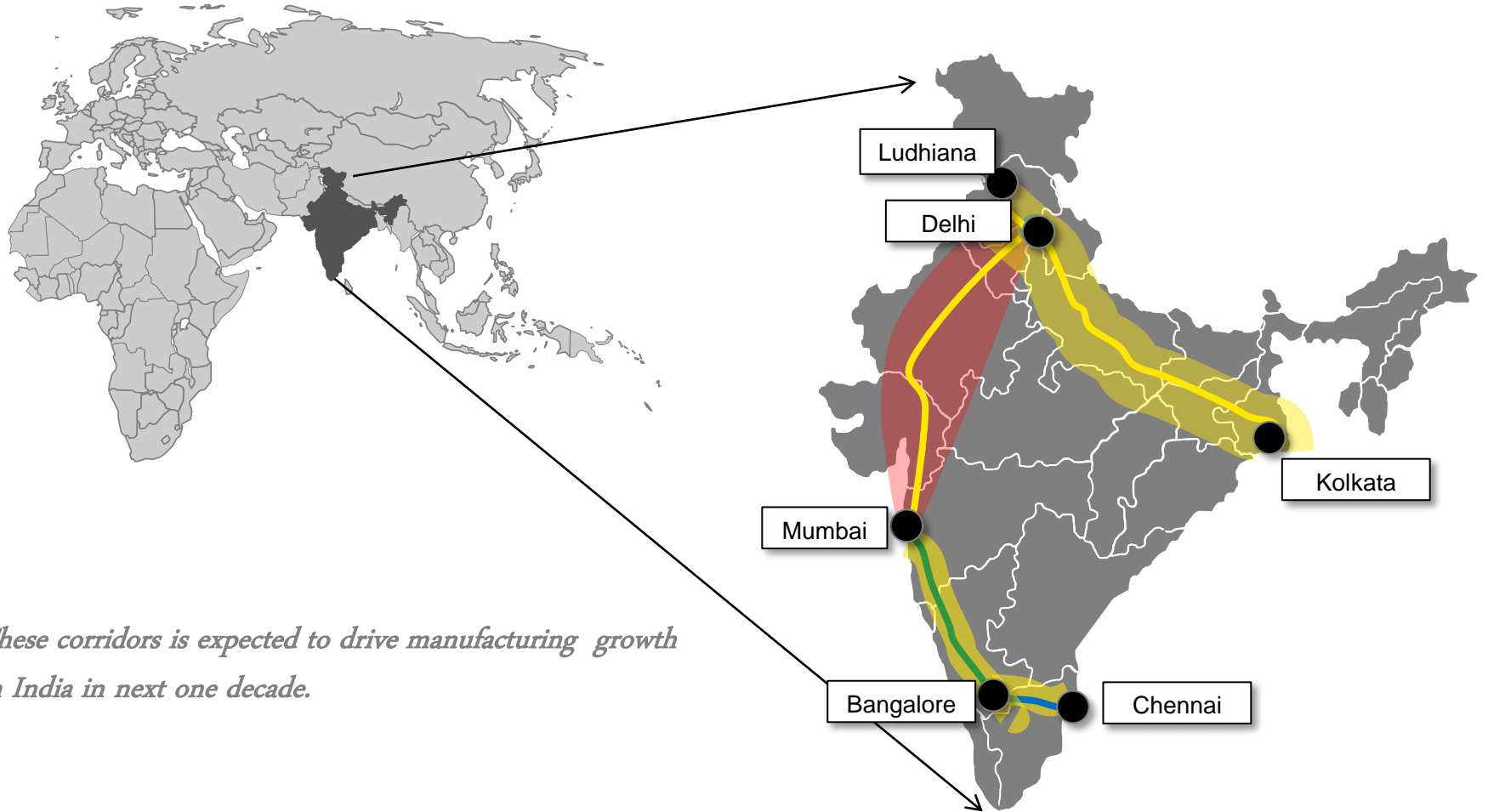
Joint CAREC-IMT Workshop on Economic
Corridor Development

8-9 April 2014 in Kuala Lumpur, Malaysia.



Building a better
working world

Corridor initiatives of GoI

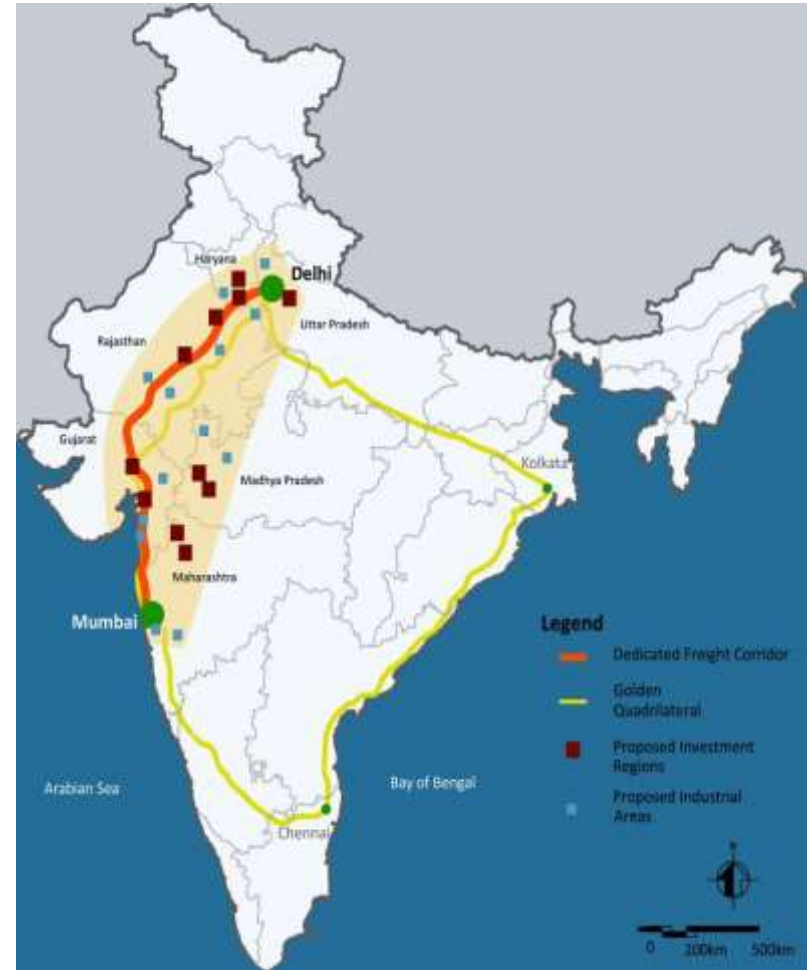


These corridors is expected to drive manufacturing growth in India in next one decade.

Idea of DMIC Corridor

- ▶ **Govt. of India** conceptualized the development of 1483-km long **Dedicated Freight Corridor (DFC)** between Delhi and Mumbai offering high-speed rail connectivity for heavy-axle load wagons.
- ▶ DMIC was envisaged along DFC to optimize on the connectivity offered.
- ▶ A band of 150 km on either side of alignment of DFC is to be developed as the Delhi-Mumbai Industrial Corridor.
 - DMIC influence zone covers 14% of country area and 17% population
 - Total Population in the Project Influence Area : 178 million*
- ▶ DMIC covers one the most developed industrial states of the country
 - States in DMIC contribute 45% to India's GDP and 58 % of the industrial output
 - They have 45% of the India factories and 57% of exports

* as per Census-2001



Genesis of DMIC Corridor

- ▶ **MOU between Govt. of India and Govt. of Japan** in December, 2006 to create the framework for mutual cooperation.
- ▶ An Inter-Ministerial Group was formed to evolve the Project Outline
- ▶ Ministry of commerce appointed consultant in March 2007 to detail the project concept
- ▶ Concept Paper including Investment Nodes approved in principle by the Indian Cabinet in Aug 2007.
- ▶ Apex Authority constituted to steer the development with the Indian Finance Minister as Chairman
- ▶ DMICDC incorporated in Jan '08 as a dedicated nodal agency incorporated in January 2008 to undertake the planning and other project preparatory activities
- ▶ **Project Development Fund (PDF)** being set up to undertake the planning and other project preparatory activities
- ▶ **Project Implementation Fund** set up as Trust in March 2013 to develop industrial nodes/cities in DMIC
 - Rs 17,500 crore in the form of grant committed by GoI for the development of industrial cities @ Rs 2500 crore per city
 - Japan announced US \$ 4.5 billion contribution for projects with Japanese participation JBIC and JICA to the DMIC facility.

Project goals



Exports

4

In 9 years

USD 720 billion



Value of Output

3

In 9 years

USD 3.3 trillion



Employment

2

In 7 years

25.5 million

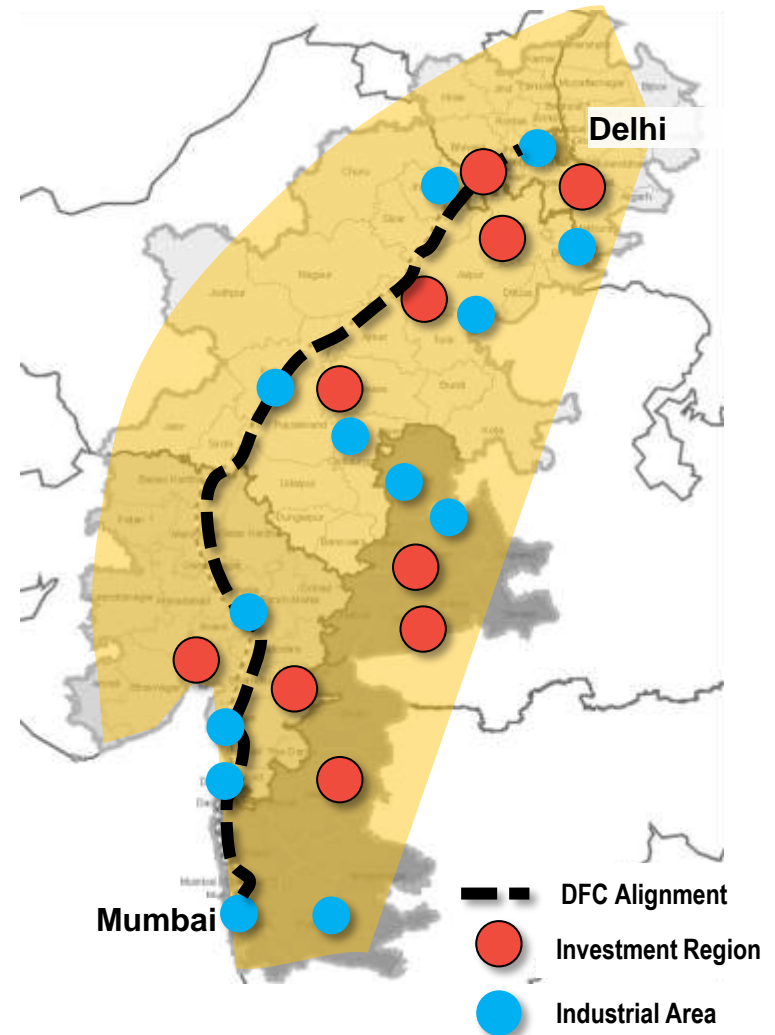
1 USD = INR 60

Strategically conceived development nodes to drive DMIC

DEVELOPMENT CONCEPT

- High Impact developments as “Nodes” or clusters within a band of 150 km on either side of Dedicated Freight Corridor (DFC)
- Each node 2 categories of **development nodes as self-sustained regions** with world class infrastructure.
 - Investment Regions (IR)~200 Sq km area
 - Industrial Areas (IA)~100 Sq km area
- **Total of 24 nodes** identified in consultation with state governments (11 Investment Regions & 13 Industrial Areas)

Seven nodes in six states are being developed in DMIC Phase 1



Range of infrastructure is proposed in DMIC plan



New industrial clusters & parks



Logistics parks, warehousing, etc.



Feeder road & rail links



Upgradation/ Modernization of ports



Power Generation



ITIs / Skill Development Centres



Waste management & CETPs



Integrated townships & urban services



Regional rail links



Convention centers, business districts, etc.

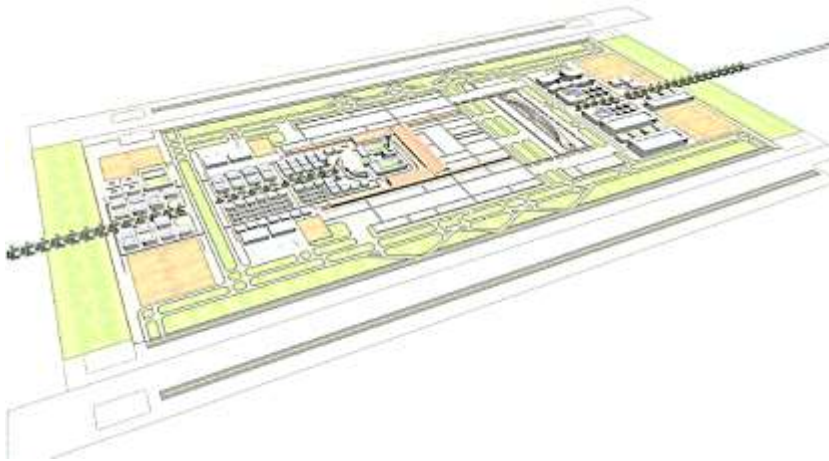
Early bird projects are being developed to kick start DMIC

State	Projects name
Rajasthan	<ul style="list-style-type: none"> Development of Aerotropolis between Jaipur & Neemrana Road Link Connecting Bhiwadi and Neemrana Development of Knowledge City
Haryana	<ul style="list-style-type: none"> Integrated Multi-Modal Logistics Hub at Rewari Exhibition Cum Convention Centre in the NCR Mass Rapid Transport System (MRTS) connecting IGI-Gurgaon –Manesar-Bawal- Rewari-Neemrana
Maharashtra	<ul style="list-style-type: none"> Shendra- Bidkin Mega Industrial Park, near Aurangabad Mega Industrial Park at Dhule MMLP and ICD at Karla near Pune Transportation and Telecom network in region next to Pune-Nashik & Pune- Aurangabad highway Convention cum Exhibition Centre at Aurangabad
MP	<ul style="list-style-type: none"> Water Supply to Pithampur from Mahi Dam Economic Corridor between Indore Airport & Pithampur Integrated Multi-Modal Logistics Hub Knowledge City near Ujjain
Gujarat	<ul style="list-style-type: none"> Mega Industrial Park at Dholera
UP	<ul style="list-style-type: none"> Development of Boraki Railway Station as Passenger and Commercial Cargo Hub Multi Modal Logistics Hub at Dadri Power Project at Greater Noida MRTS between Dadri-Noida-Ghaziabad Investment Region and Delhi

Early bird projects have been selected by each states as per their own requirement

Aerotropolis

- ▶ Strategically located between Delhi & Jaipur in Bhiwadi
- ▶ Total Area: 24 Sq.km
- ▶ Total Cost: Rs. 4000 crores
- ▶ Key function : Passenger & Cargo traffic handling, Maintenance Repair Overhaul (MRO)
- ▶ Non aviation - Business Parks, Hotels, Distribution centers etc.
- ▶ Techno-Economic Feasibility approved by State and NOC awaited from Ministry of Civil Aviation



Exhibition cum Convention centre

- ▶ Total Site Area- 154 Ha (380.53 acres)
- ▶ Exhibition halls – 2 million square feet
- ▶ Convention centre- 6000 fixed seating capacity
- ▶ Multi-purpose Arena- 18,000 capacity
- ▶ 3500 hotel keys- 4-5 star, business hotels, service apartments
- ▶ Commercial office space, Multi-level parking, Green open space
- ▶ IFC – to be developed as Air Cargo Complex



Planning in DMIC

Benchmarked against the best new generation Industrial Cities in the world

Special emphasis on project preparation

Introduction of new sustainable development concepts

- ▶ **Energy savings and** lowered Per capita carbon footprint emissions
 - Build green buildings/ green Engineering
 - promote affordable zero carbon technologies
- ▶ Conservation of agri land & protection of sensitive natural environment (Coastal zones, forests, etc.)
- ▶ Integration of existing villages into the new city
- ▶ **SMART City** - IT based real time Control and Governance
- ▶ **Reduction of commuting needs** for the workforce
 - Polycentric structure – with multiple CBDs and Industrial zones
 - Integration of land uses encouraging mixed-use
 - Neighbourhoods distributed around High access Mass Transit Corridors
 - Encouraging cycling & pedestrian modes over cars
- ▶ **Recycling and Reuse** of water and solid wastes
 - Rainwater harvesting and Recycling /Reuse of treated wastewater
 - Bio-remediation techniques for polluted water bodies
 - Reuse and recycle of non-biodegradable waste

Best practices in Master Planning being brought in through international consultants

Nodes being developed as new greenfield cities: An example

Total Area



920 sq.km

Developable area

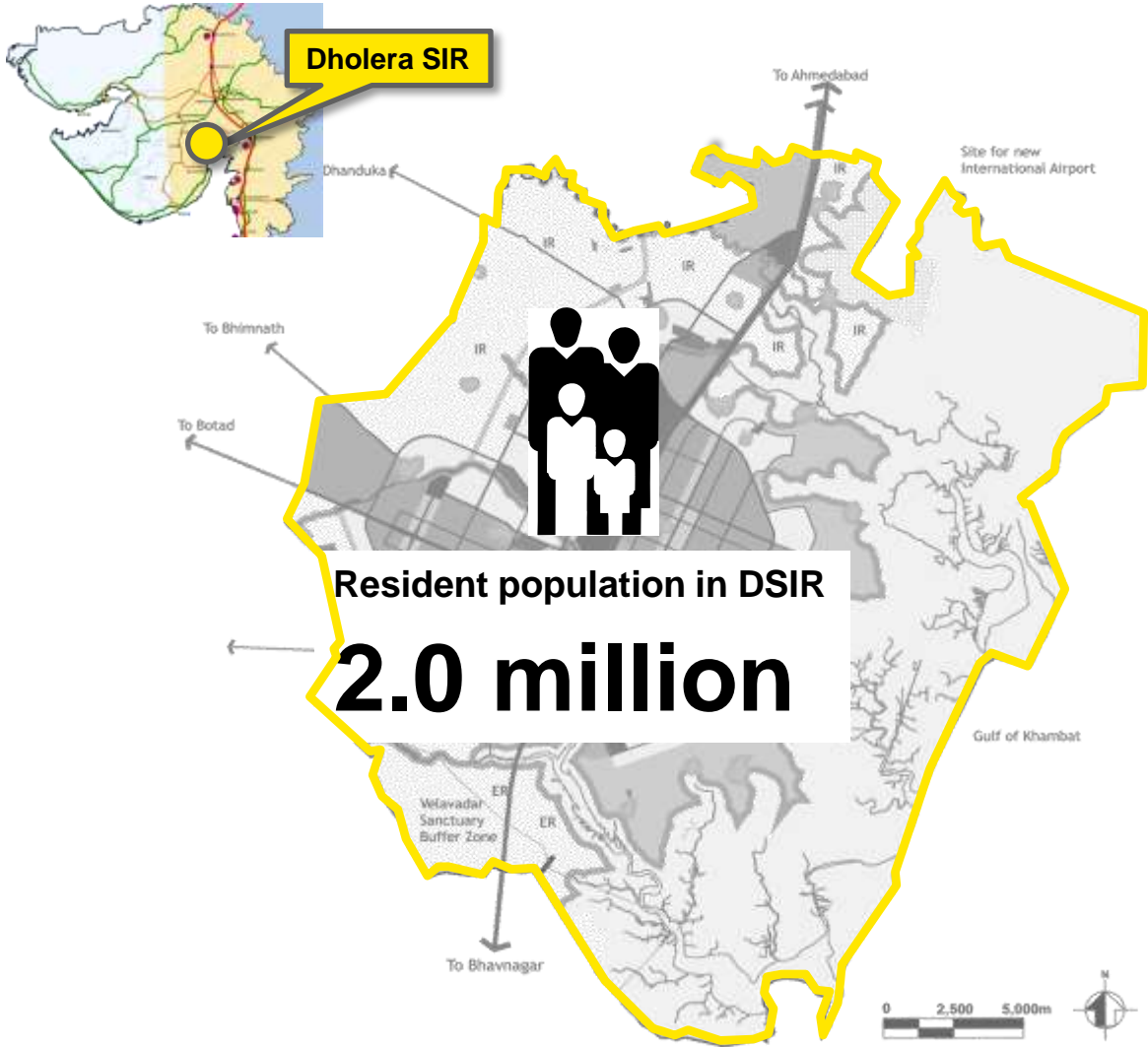


540 sq.km

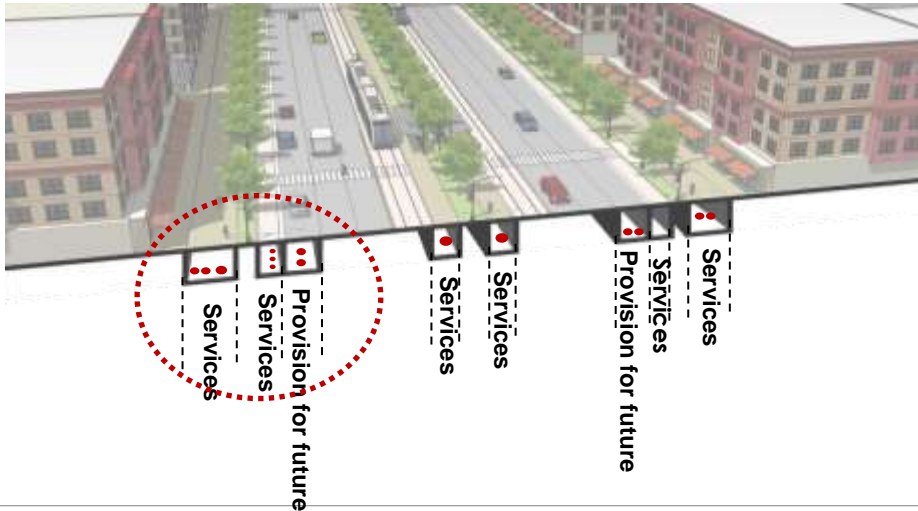
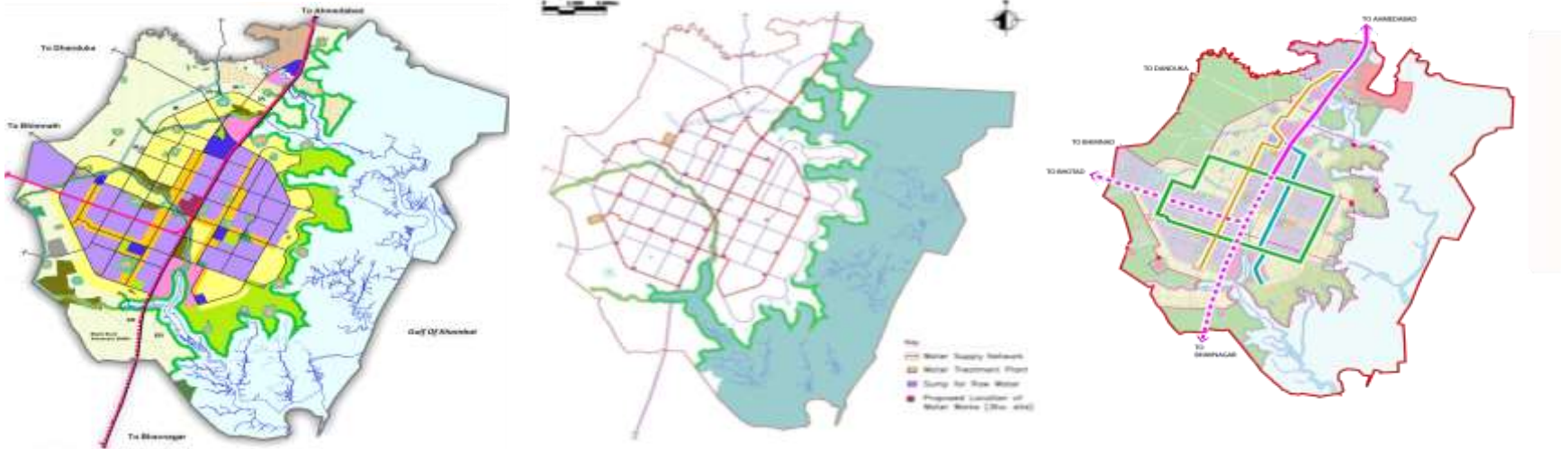
Total Jobs



827,000



Focus on developing world-class infrastructure



Consultations with village communities

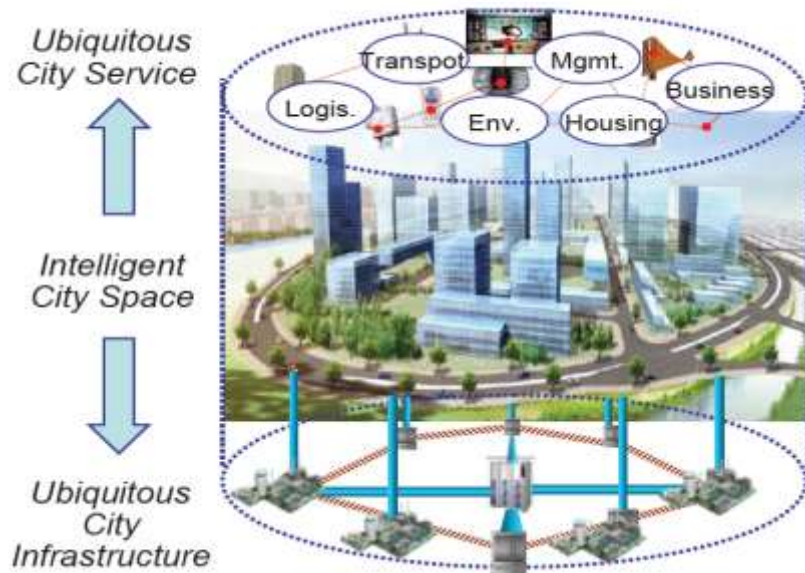


New initiatives

Novel initiatives launched by DMIC as the demonstrator projects

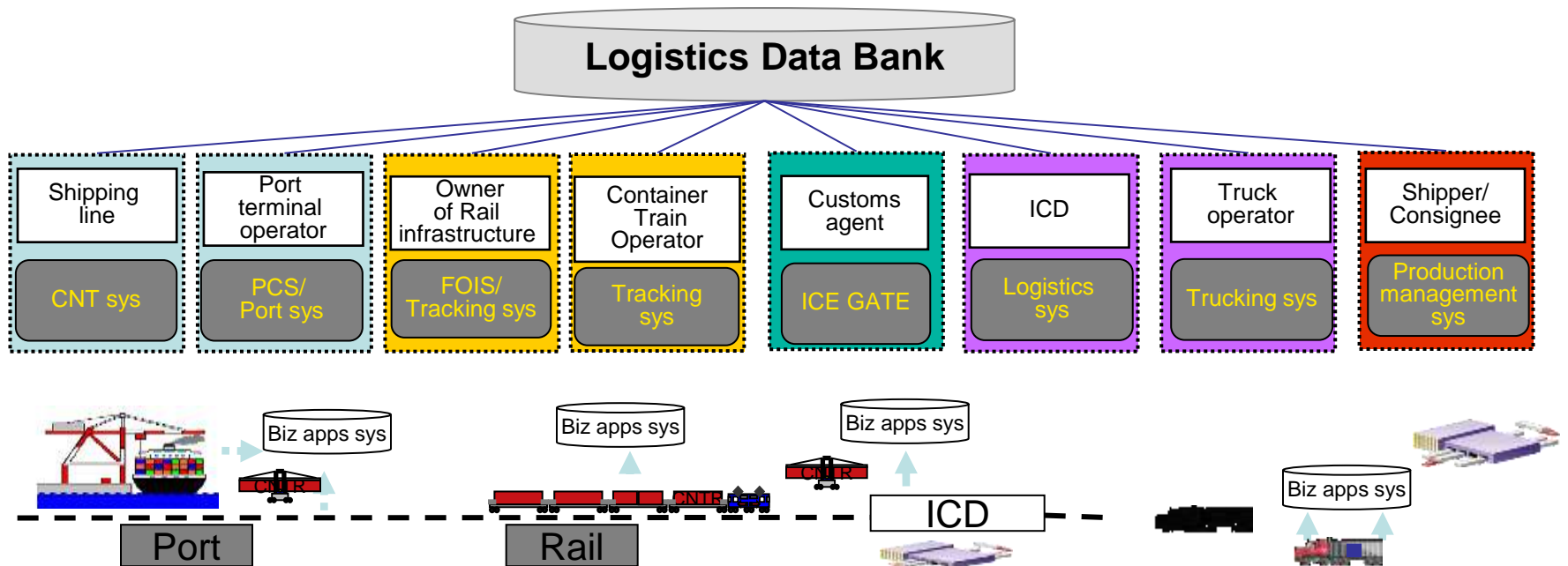
Smart Cities are being introduced

- ▶ Introducing IT in city Governance and Infrastructure Management
 - Promoting smart grid technology and smart metering
 - Provision for Fibre-to-Home Connections
 - CCTV and access control and centralized monitoring
- ▶ Information & Communication Technology (ICT) Master Plan is under-preparation
- ▶ Pilot studies presently underway by CISCO for Shendra Bidkin & Dholera and by IBM for Dighi



DMIC Logistics Data Bank

- ▶ Aimed at improving competition, reducing transportation lead time and cost by **sharing goods movement information on real time basis** among all agencies in the Supply Chain **using an IT based platform**.
- ▶ Necessary to create an extensive database at an early stage to generate rapid changes in supply chain.



Total Energy Network Solution-Manesar Industrial Park

- ▶ Pilot by Toshiba Corporation with Tokyo Gas Co. Ltd. and Energy Advance Co. Ltd
- ▶ Utilize high-efficiency **Gas-cogeneration** to produce electricity and heat while applying EMS and batteries for optimal control of micro-grid.
- ▶ Reduce transmission and distribution losses.

Electrical and Gas Demand

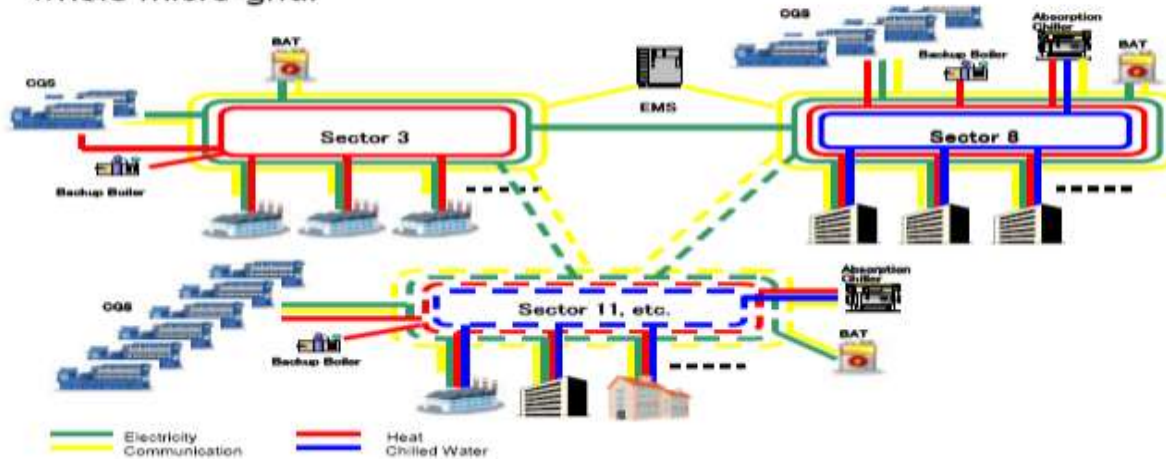
Potential Implementation at IMT Manesar

2014: 1x10MW (Pilot): 20million scm/year

2015: 5x50MW : 5x100million scm/year

System configuration

- ✓ EMS control and supply the stable electricity and heat to the customers.
- ✓ Heat is dispatched to the near customer from the each Grid.
- ✓ Electricity is optimized and controlled in between clusters and as a whole micro-grid.



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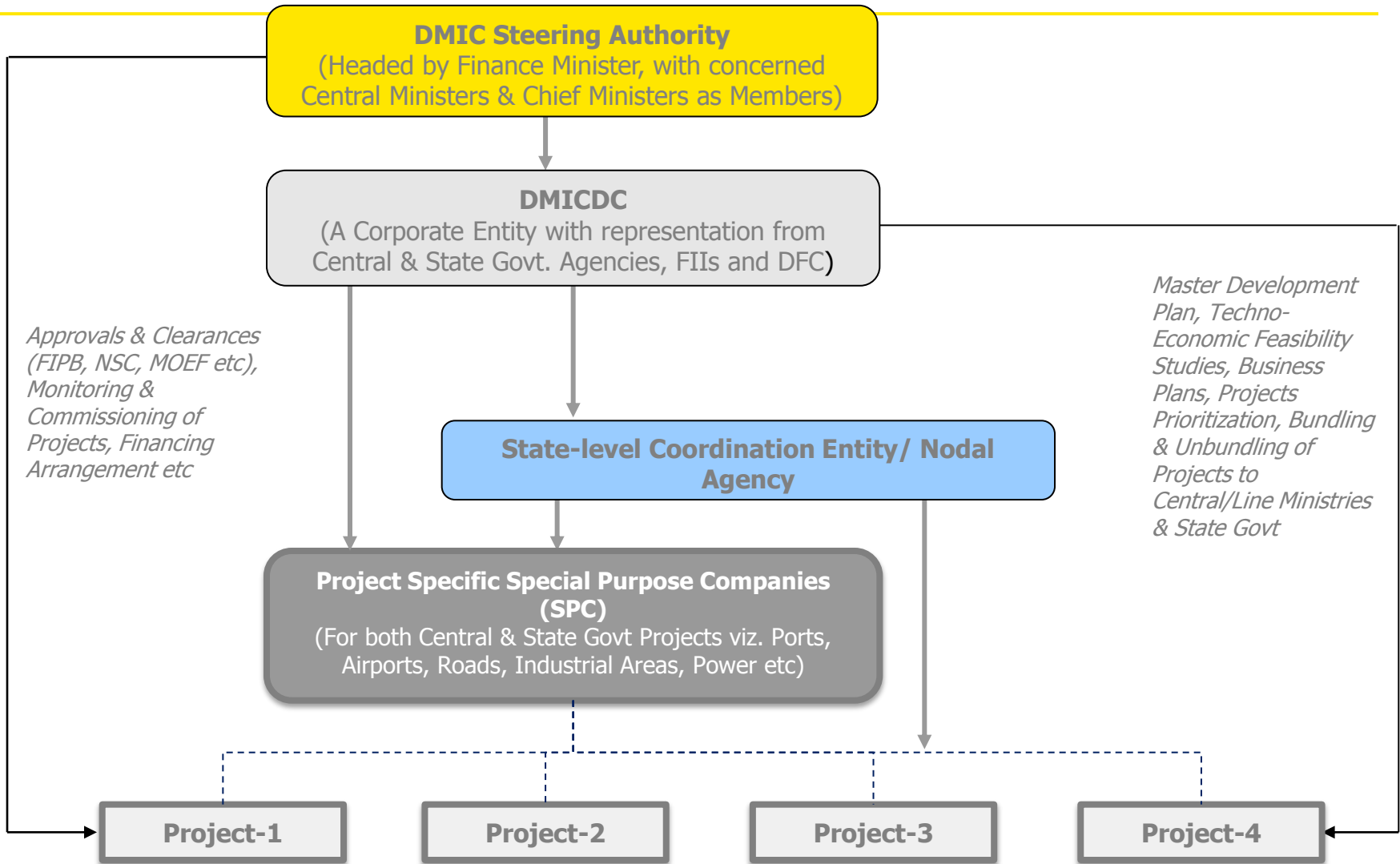
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Projects identified by Indo-Japan Task Force on Delhi-Mumbai Industrial Corridor (DMIC)

State	Name of the project	Sector	Interested Company
Gujarat	[Sanand] Smart community platform (e.g. industrial wastewater treatment and reclamation, lithium-ion battery infrastructure) in industrial parks	Urban Development	Mitsubishi Heavy Industries's consortium
Gujarat	[Dahej] Grand design development focusing on water supply to an industrial park through seawater desalination, and on photovoltaic power generation	Water	Hitachi's consortium
Gujarat	Mobile Phone Recycle Project	Others	Japan Environment Planning (JEPLAN)
Gujarat	Concentrated Solar Power Project	Power	Mitsui Engineering Shipbuilding Co., Ltd.
Gujarat	Transmission Project with Smartgrid	Power	Hitachi
Gujarat	[Dholera] Providing industrial grade Recycled Waste Water to Dholera Special Investment Region	Water	-
Gujarat	Railway Project between Ahmedabad-Dhorela	Transportation	-
Haryana	[Manesar] Establishment of a compound microgrid (electricity and heat) including industrial water treatment in an existing industrial park.	Power	Toshiba's consortium
Haryana	Regional MRTS between Delhi-Manesar-Bawal-Neemrana with feeder service to enhance connectivity between Delhi and upcoming manufacturing hubs.	Transportation	-
Maharashtra	[Shendra] Urban development centering on a smart water treatment system, including water supply, water reuse, and sewage		
Maharashtra	High-Efficient Gas-firing Combined Cycle Power Producer	Power	Mitsubishi Corp.
Maharashtra	Gas-Fired IPP Project	Power	Marubeni Corp.
Maharashtra	[Pune] Light Rail Transit system	Transportation	Toshiba
Rajasthan	[Neemrana] Efficient and stable supply of high-quality electricity in a Japanese-affiliated industrial park.	Power	Mitsui-KEPCO consortium
Rajasthan	[Neemrana] Treated Water Conveyance System from Okhla	Water	-
Madhya Pradesh	[Pithampur] Water Supply from Narmada	Water	-
Uttar Pradesh	[Dadri- NOIDA- Ghaziabad] Transport connectivity to Dadri- NOIDA- Ghaziabad Investment Region	Transportation	-
Non-State specific	Logistic Data Bank Project	Logistics	NEC
Non-State specific	Automobile Freight Train Operator Transportation in DMICDC corridor	Transportation	Sojitz

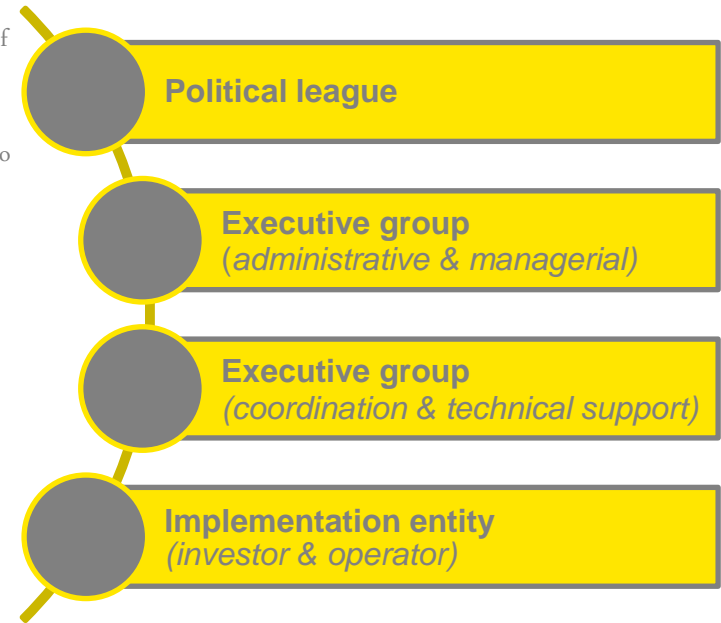
Implementation framework for DMIC

Implementation Framework



Four-Tier Implementation Structure

- ▶ **Apex Authority** - Headed by the Finance Minister with concerned Central Ministers and Chief Ministers of respective DMIC States as Members;
- ▶ **DMICDC** - A Corporate Entity, referred as DMIC Development Corporation (DMICDC), to coordinate Project
- ▶ **State Level Nodal Agencies** - An existing institution were nominated by state govt. for coordination between DMICDC, various State Govt. Entities;
- ▶ **Special Purpose Vehicles (SPVs)** - Project specific corporate entity to implement individual projects within DMIC viz. Industrial Roads, Power, Ports, etc.



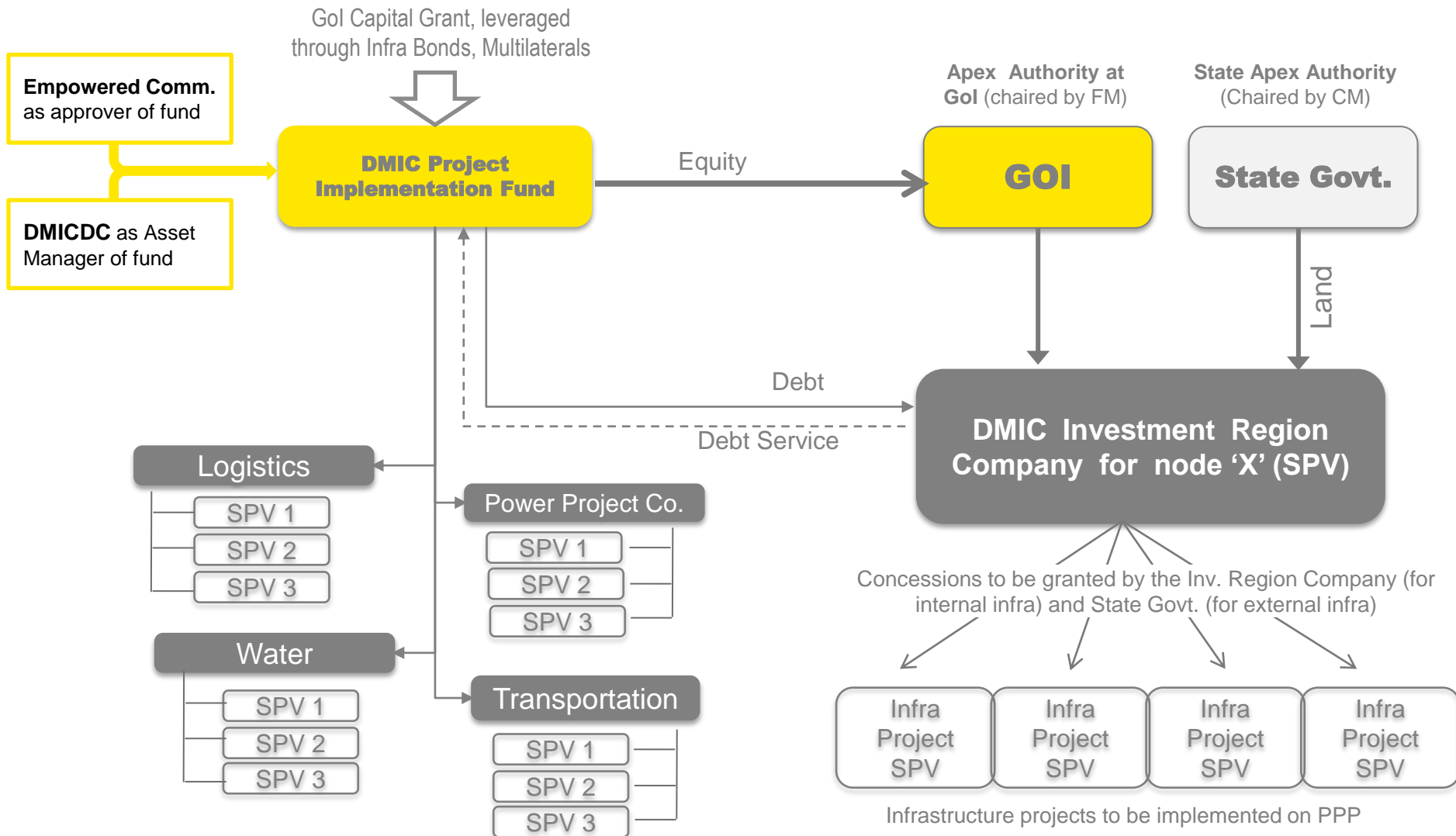
Role of DMIC States

- ▶ Each State Government will notify a nodal agency to coordinate with DMICDC, State level agencies, and SPVs
- ▶ Assist in acquiring the land necessary for setting up infrastructure, processing and non-processing areas;
- ▶ Facilitates all clearances required from the State Government
- ▶ Develop world class trunk infrastructure and utilities, linkages under its jurisdiction within a stipulated time frame after notifying the location

Financial Structure of the DMICDC

Cost heads	Estimated costs	Institution	funding
Project preparation costs <i>(preparation of master plans, feasibility studies, EIA, etc.)</i>	US\$ 2 -2.5 billion	DMIC Project Development Fund (Revolving fund)	<ul style="list-style-type: none"> ▪ Set up as corporate accounts under the ambit of DMICDC ▪ 100% contribution from Govt. of India by way of a grant ▪ Set as revolving fund ▪ To be replenished from successful bidders of PPP projects
Project investments <i>(initially unbankable projects like external infrastructure and later bankable projects too)</i>	US\$ 80 -90 billion	DMIC Project Implementation Fund	<ul style="list-style-type: none"> ▪ Set up as separate Trust with DMICDC as asset manager and administrative support ▪ 50% contribution from Govt. of India by way of grant ▪ 50% contribution from Govt. of Japan by way of untied loans <i>(US\$ 4.5 billion)</i> ▪ Loans facilitated by DMICDC as a pass-through arrangements for specific projects
Project investments <i>(bankable projects)</i>	N.A.	SPVs	<ul style="list-style-type: none"> ▪ Land cost to be provided by State govts. ▪ PPP / private investments ▪ Market borrowings
Administrative costs	N.A.	DMICDC	<ul style="list-style-type: none"> ▪ 49 % equity by Government of India ▪ 26% equity by Japan Bank for International Cooperation (JBIC) ▪ 25% equity by indian Financial institutions

Financing framework for DMIC



Experience of DMIC

DMIC has exhibited both positives and negative aspects

Positives accruing from DMIC

▶ **DMIC has brought some good practices in urban planning paradigm in India**

- ❑ Introduction of novel concepts (*Smart city, Eco-city*) in city planning is already having demonstration effect on planning policy
- ❑ Establishment of corporate entity for planning has shown way for professional planning and project development process in urban planning.
- ❑ Development in new cities is not entrusted to local municipalities / public works department. Instead every city will developed by SPV with qualified master planners and project managers.

▶ **First effort to develop regional-level spatial plan across states which has shown way .**

- ❑ Innovative implementation structure which has emerged as model for centre-state coordination within limits of constitution
- ❑ Use of IT for facilitation of movement of Goods and data sharing among states

▶ **First concerted effort on integrating urban development with industrial promotion which is ‘need-of-the-hour’**

- ❑ Development of new greenfield cities to meet growing urbanization pressure and being implemented
- ❑ Efforts on development of regional rail-links, Skill Development Center, 10,000MW Power Generation Capacity, has accelerated.

Failings observed so far in DMIC

- ▶ Similar efforts of developing 'new' industrial clusters have failed.
 - ❑ Many clusters initiatives like SEZs, Mega Food Parks, IT Investment Region, etc. have failed.
 - ❑ Of 30 Mega Food Park approved by GoI only 2 projects are partially operational.
 - ❑ Out of the total 588 approved SEZs since their launch in 2005, only 60 are operational
 - ❑ Many SEZ approvals are being surrendered and 58 SEZs have been de-notified in last 2 years.

- ▶ Scale and planning effort of the DMIC seems ambitious
 - ❑ Total 2,400 sq km is planned to be developed in Phase 1. Dholera node itself would involve over 920 sq km of land which is even larger than Singapore (716 sqkm)
 - ❑ MIDC has only allotted 6,000 ha while GIDC has only allotted 3,600 ha of industrial land in entire state in last 10 years as compared to proposed development of ~30,000 ha in DMIC

- ▶ Considerable time (> 5 years) has been spent on planning no visible results on ground

- ▶ DMIC has loosened from resolving ground-level issues plaguing manufacturing and now focussed on urban planning.

- ▶ State development agenda and priorities has taken precedence over DMIC

- ▶ Some of the projects initiated are disconnected from larger DMIC program

- ▶ Private investment are not materializing as expected in short-term.

Ground-level issues continue to plague DMIC

- ▶ DMIC is unable to break ground on prevailing issues in projects i.e. *land acquisition, environmental approvals, clearances, availability of skill manpower, trunk infrastructure, etc.*
 - ❑ Land acquisition continues to be major road block and government authorities are reluctant to acquire land in the current environment.
 - ❑ No concrete steps have been taken for seamless movement of goods between states within DMIC region like implementation of GST.
 - ❑ Cheap and reliable power is still not available in most states which is major bane for industries
 - ❑ There is uncertainty over the availability of gas for its five proposed 6,000-mw power plants and DMICDC is now seeking coal blocks from the government to fire the units
- ▶ Corridor developments are inherently complex requiring strong interest of states.
- ▶ Since planning is undertaken by DMICDC there is little ownership of state in DMIC
- ▶ State entities have there own agenda which take precedence over DMIC.

Considerable time has been spent on planning which cannot deliver without resolving fundamental constraints for manufacturing sector

Federal – State relationships are complex in India

- ▶ There is always an inter-governmental tug-of-war going on between states & Central govt.
- ▶ DMIC is multi-sectoral spread across multiple states and thus multiple department, state agencies & municipalities
- ▶ Legal hurdles are also emerging due to multiplicity of agencies
- ▶ State entities have their own agenda which take precedence over DMIC.

Effective framework for coordination is yet to be seen in terms of on-ground actions

Funding is always a challenge

- ▶ Funding is overly dependent on Centre government and Japanese funding.
- ▶ Funding requirement is very large and there is limit to resources of Central govt. and Japan
- ▶ There is need to draw or pledge more financial commitment from States to DMIC to sustain financing in long-term
- ▶ Private investment are unlikely to materialize in short-term.
- ▶ Establish institutional mechanisms for business incubation, venture capital, to draw private investment in areas other than infrastructure

Financial plan of DMIC may need to be revisited given present constraints

Thank you



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