



Indian Railways for Wider Regional Connectivity Towards Building a Resilient Society



Kathmandu (Nepal)
17th to 20th November 2015



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Director (Planning)
Ministry of Railways (India)



An Overview



- IR carries more than 23 million passengers per day (equivalent to population of Australia)
- Runs 20038 trains per day (12617 passenger +7421 freight)
- Carries more than 3 million tonnes of freight per day
- 1.31 Million Employees of which 17,300 gazetted posts including 2506 doctors
- Predominantly 1676mm(BG) gauge
- Total track length 116000 km.
- 65,436 Route Km, i.e. circumference of the earth
- 20884 Electrified Route Km(32 % of total route km)
- 7,172 Stations
- 9956 Locomotives
- More than 244731 wagons & 57256 passenger coaches

* as on 1.4.2015



Organisational Structure

3 tier Management

- Top – Railway board, **Chairman and Members**
- Middle -16 zones headed by **General Managers**
- Bottom -68 divisions headed by **Divisional Railway Managers**



GROWTH STORY OF LAST 64 YEARS



ITEM	1950-51	2013-14	%VARIATION
Double and multiple route length(Kms)	5127	19,887	289%
Running track Kms (all Gauges)	59,315	89,987	52%
Freight carried (Million Tonnes)	73	1054	1344%
Passenger Kms (Millions)	66,517	11,58,742	1642%
Passengers Originating (In Millions)	1,284	8,420	556%
Seat/berth capacity (suburban)	87,986	15,28,124	1637%
Seat/Berth Capacity (non Suburban)	8,54,678	36,43,423	327%
Wagon capacity (Million Tonnes)	4.14	13.65	230%
Wagon Turn around(Days)	11	5.13	(-)54%



Network and Resources

Production Units

- **Integral Coach Factory**, Perambur, (1400 coaches per annum)
- **Rail Coach Factory**, Kapurthala, (1500 coaches per annum)
- **Diesel Locomotive Works**, Varanasi, (250 locomotives per annum)
- **Chittaranjan Locomotive Works**, Chittaranjan, (220 locomotives per annum)
- **Rail Wheel Factory**, Yelahanka (190000 wheel discs, 50000 axles per annum) and,
- **Diesel Loco Modernisation Workshop**, Patiala. (Rebuilding of 108 locomotives per annum)



Network and Resources

PSUs/Corporations/Registered Societies

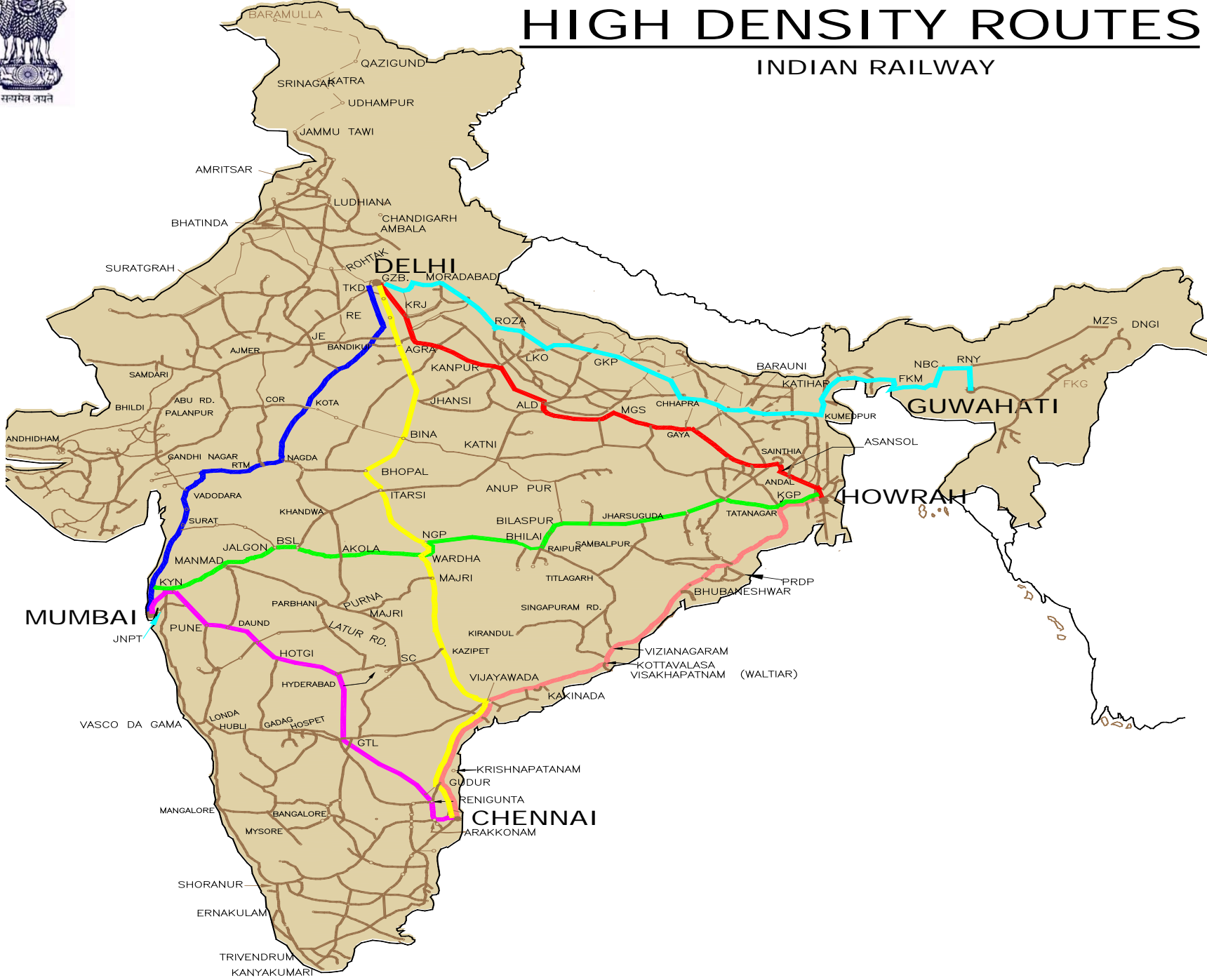
1. Bharat Wagon and Engineering Company Ltd.
2. Centre for Rail Information Systems.
3. Container Corporation of India Ltd.,
4. Dedicated Freight Corridor Corporation of India Ltd.,
5. Indian Railway Catering and Tourism Corporation Ltd.,
6. Indian Railway Finance Corporation Ltd.,
7. IRCON International Limited,
8. Konkan Railway Corporation,
9. Kutch Railway Corporation Ltd.
10. Mumbai Rail Vikas Corporation,
11. Pipavav Railway Corporation Ltd.,
12. Rail India Technical and Economic Services Ltd.,
13. Rail Land Development Authority,
14. Rail Vikas Nigam Ltd.,
15. Railtel Corporation of India Ltd.,



सत्यमेव जयते

HIGH DENSITY ROUTES

INDIAN RAILWAY





Freight Business

Major Commodities carried

- Coal
- Raw material for steel plants
- Pig-iron and finished steel
- Iron-ore
- Cement
- Food grains
- Fertilizer
- POL (Mineral Oil)



Passenger Business

Major types of Passenger Traffic

- Suburban
- Non-Suburban



सत्यमेव जयते



Passenger Business

Suburban and Non-Suburban traffic

(No. of passengers, Passenger km, lead and earnings 2009-10)

Type	No. of Passg. (mill.)	% share	PKM (mill.)	Lead (Km)	Earnings (Rs Cr.)	% Share
Suburban	4012.41	54%	132213	33	1742.76	7%
Non-Suburban	3370.36	46%	772548	229	21745.41	93%



Network and Resources- Constraints

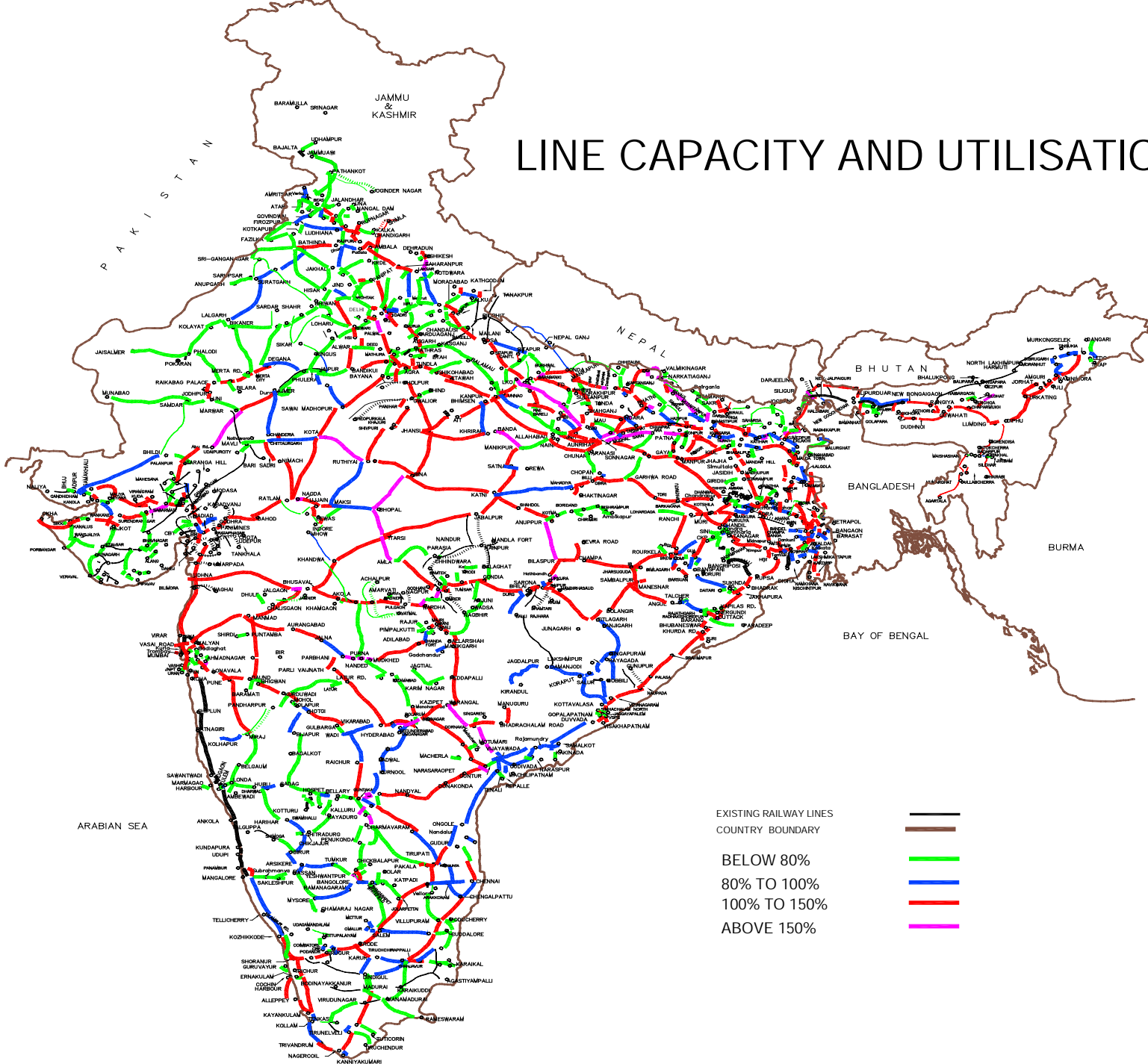
- IR's main trunk routes viz., the GQ and the diagonals which form 16% of the network but carry 58% of the freight traffic and 52% of the passenger traffic are badly saturated
- Since 1950-51, freight output and passenger output have gone up by 11 times and 9 times while route kms have gone up by only 1.2 times
- Common infrastructure for passenger and freight traffic hampering resource optimisation
- Inadequate capacity for production of required number of electric locomotives, diesel locomotives and passenger coaches
- Paucity of funds for augmenting infrastructure



सत्यमेव जयते



LINE CAPACITY AND UTILISATION





ROAD AHEAD

- **CAPACITY CREATION**

- **LINE CAPACITY (by creating physical capacity on tracks)**

- **DOUBLING/TRIPLING/QUADRUPLING**
- **LONGER LOOPS FOR LONG HAUL OPERATION**

- **TERMINAL CAPACITY.**

- **FREIGHT TERMINALS (PFT)**
- **PASSENGER TERMINALS**



CAPACITY CREATION

At present, the shelf of projects is as under:

SNo.	Plan Head	No. of Works	Length (Km)	Sanctioned Cost (Billions)
1	New Line	157	17475	\$ 28.39
2	Gauge Conversion	43	9774	\$ 6.38
3	Doubling	242	18748	\$ 25.57
	Total	442	45996	\$ 60.34
4	Traffic Facility	554	0	\$ 1.70
	Grand Total	996	45996	\$ 62.04



Technological Upgradation



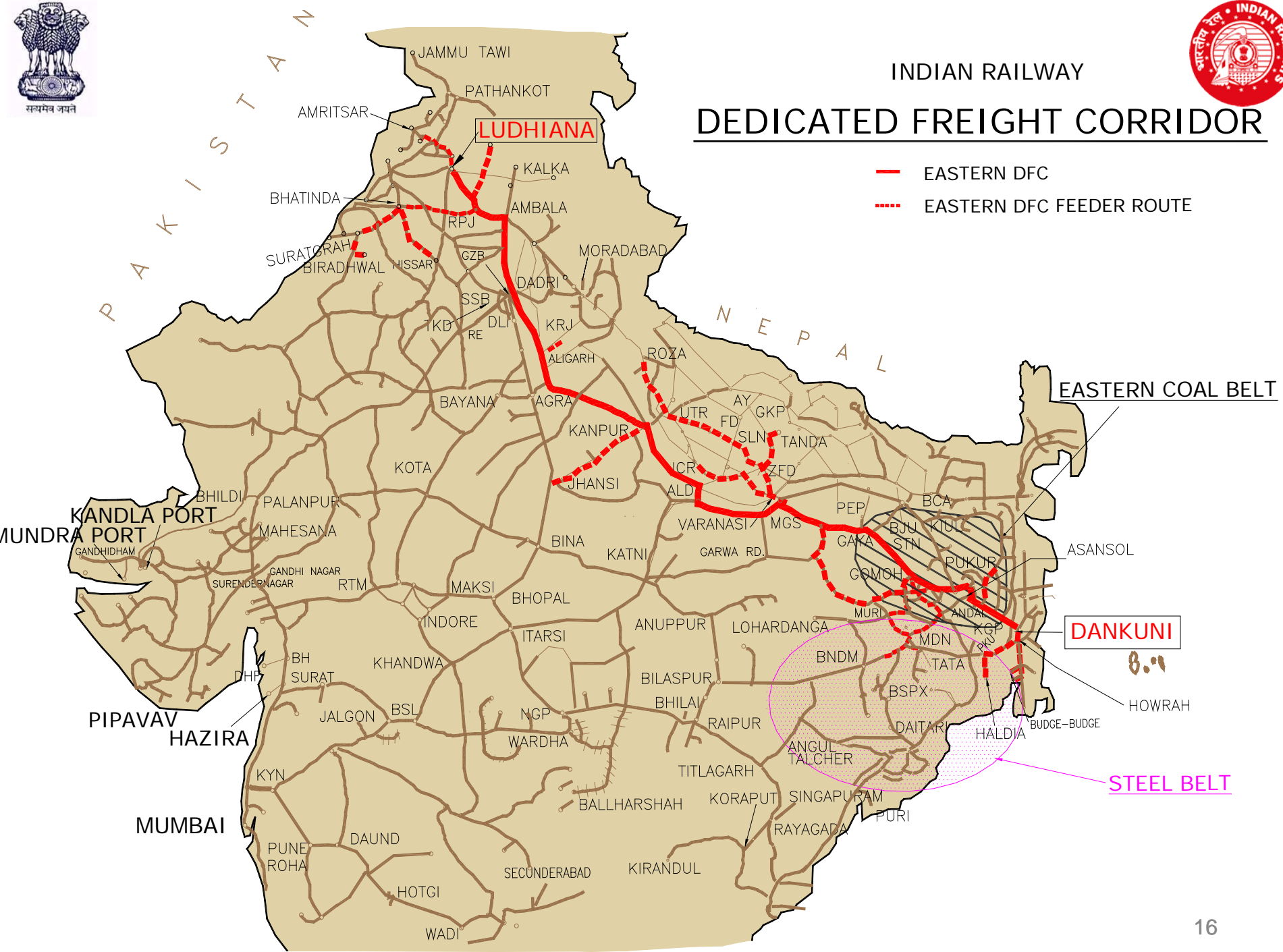
- 25 tonnes axle load track.
- Dedicated Freight Corridor with latest parameters.
- Higher Capacity Light Wagons to improve pay load to tare ratio.
- High Capacity Loco motives.
- Modern Signalling on busy routes.
- Use of Bio-toilets on trains.
- Upgraded IT system as FOIS and Control office application.
- E-forwarding note for ease of Business.



INDIAN RAILWAY

DEDICATED FREIGHT CORRIDOR

- EASTERN DFC
- - - EASTERN DFC FEEDER ROUTE



EASTERN COAL BELT

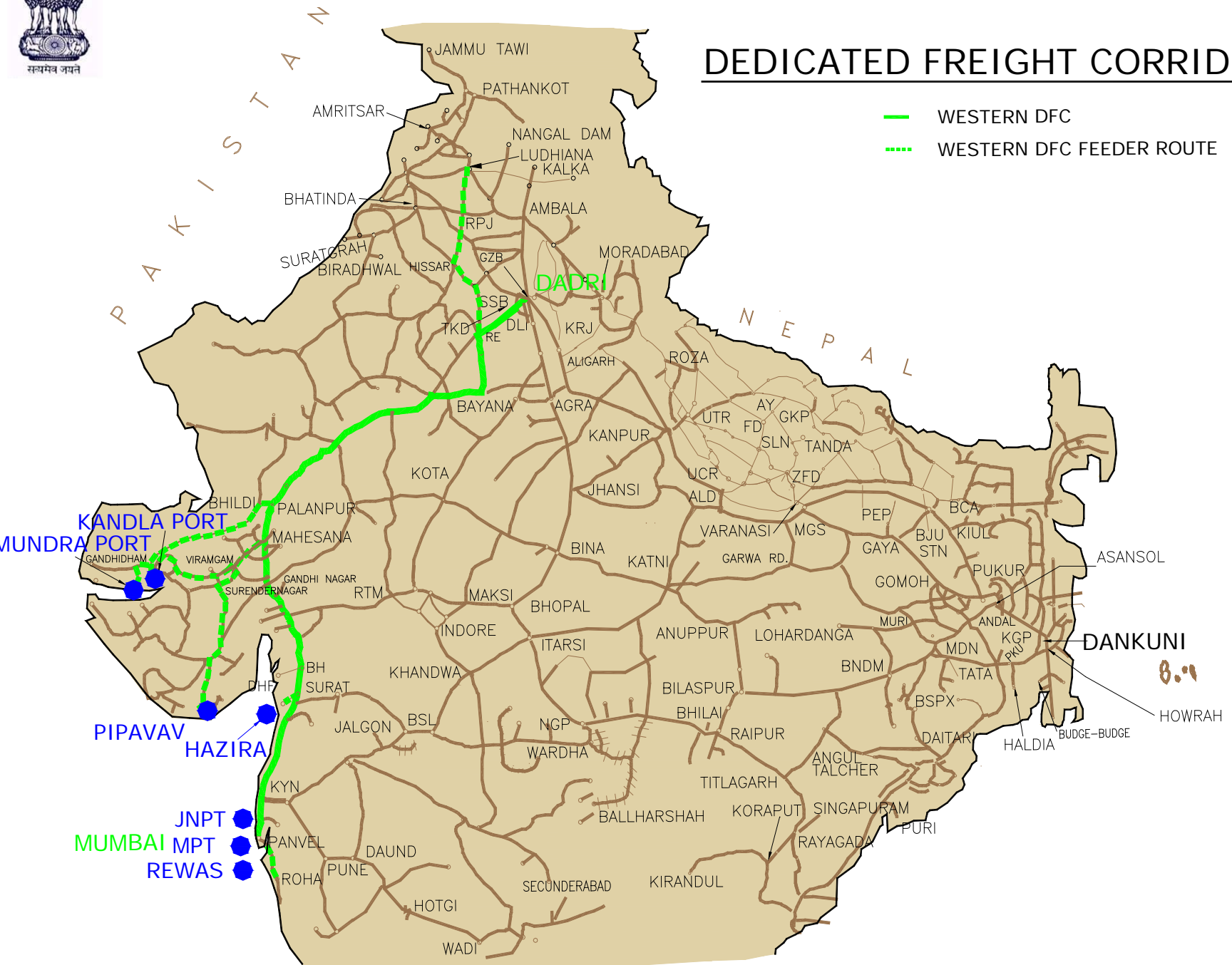
DANKUNI

STEEL BELT



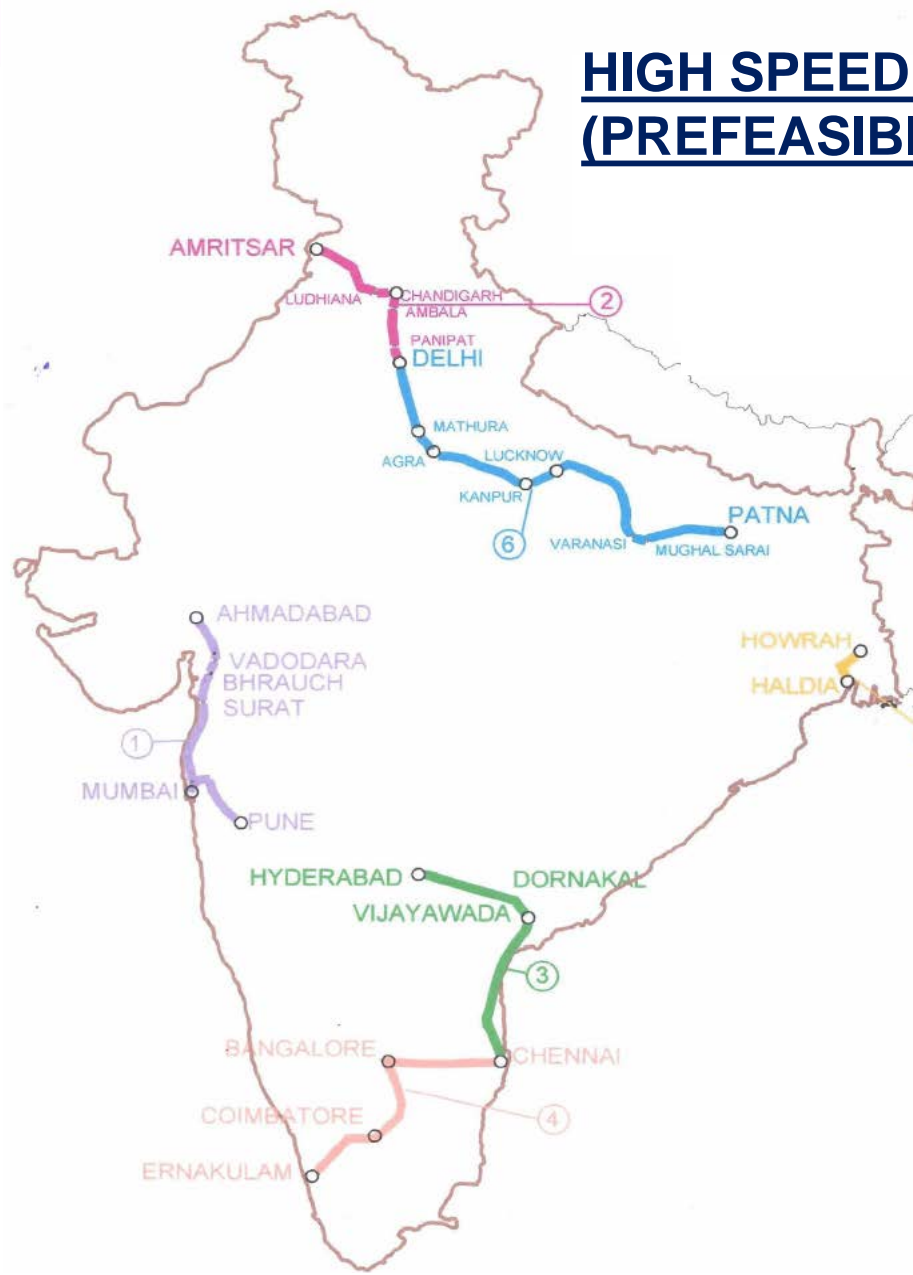
DEDICATED FREIGHT CORRIDOR

- WESTERN DFC
- - - WESTERN DFC FEEDER ROUTE





HIGH SPEED RAIL CORRIDORS (PREFEASIBILITY STUDY PROPOSED)



- 1 – Pune-Mumbai-Ahmedabad,**
650 km approx.
- 2 – Delhi-Chandigarh-Amritsar,**
450 km approx.
- 3 – Hyderabad-Dornakal-Viajayawada-Chennai,**
665 km approx.
- 4 – Chennai-Bangalore-Coimbatore-Ernakulam,**
650 km approx.
- 5 – Howrah-Haldia,**
135 km approx.
- 6 – Delhi-Agra-Lucknow-Varanasi-Patna,**
990 km approx.



Encouraging PPP and FDI in Rail Sector



IR schemes for raising funds for Infrastructure

Rail Connectivity/ Capacity Augmentation

- Policy of participative models
- Cost Sharing with States

Container Train Operations

Container
Train
Operators

Terminal Facilities

- Private Freight
Terminals
- Station
redevelopment

Other Assets

- Wagon
Investment
Schemes
- Loco
Factory



FDI in Rail Sector

FDI is recently permitted in construction, operation and maintenance of the following:

- Suburban corridor projects through PPP.
- High speed train projects
- Dedicated freight lines.
- Rolling stock including train sets and locomotives/coaches manufacturing and maintenance facilities.
- Railway Electrification.
- Signaling systems.
- Freight terminals.
- Passenger terminals.
- Infrastructure in industrial park pertaining to railway line/sidings including electrified railway lines and connectivity to main railway line.
- MRTS.



Environment Friendly IR

- It is six times more energy-efficient than road and four times more economical. The social costs in terms of environment damage or degradation are significantly lower in rail.
- It provides rapid, reliable and cost-effective bulk transportation to the energy sector, to move coal from the coal fields to power plants and petroleum products from refineries to consumption centres.
- A proposal is in place to harness solar energy by utilising rooftop spaces of railway stations, other railway buildings and land, through the PPP mode.



Introduction of CNG DEMU rake in Rewari-Rohtak section of NR





LOCOMOTIVES WITH HOTEL LOAD CAPABILITIES



- Entire electric load requirement of train catered to by locomotive
- Eliminates need of separate generator car
- Increases train capacity



Proliferation Plan-Bio Toilets



- **Target 2015-16:** Fitment of 17000 bio-toilets
- **Target 2016-17:** Elimination of direct discharge toilet system in all newly manufactured coaches
- **स्वच्छ भारत अभियान:** “Open defecation free” India by the year 2019
- **Target 2021-22:** Elimination of direct discharge toilet system from entire fleet of coaches

Retro-fitment Action Plan

Year	15-16	16-17	17-18	18-19	19-20	20-21	21-22	Total
Coaches	2,500	4,000	4,500	5,000	5,500	6,000	6,000	33,500



Bio-toilets in coaches - Status



Year	No. of Bio toilets	No. of coaches on which these are fitted	
2010-11	57	31	
2011-12	169	67	
2012-13	1,337	561	
2013-14	8024	2,988	
2014-15	10,159	3,374	As on 31.03.2015
Cumulative	19,746	7,021	

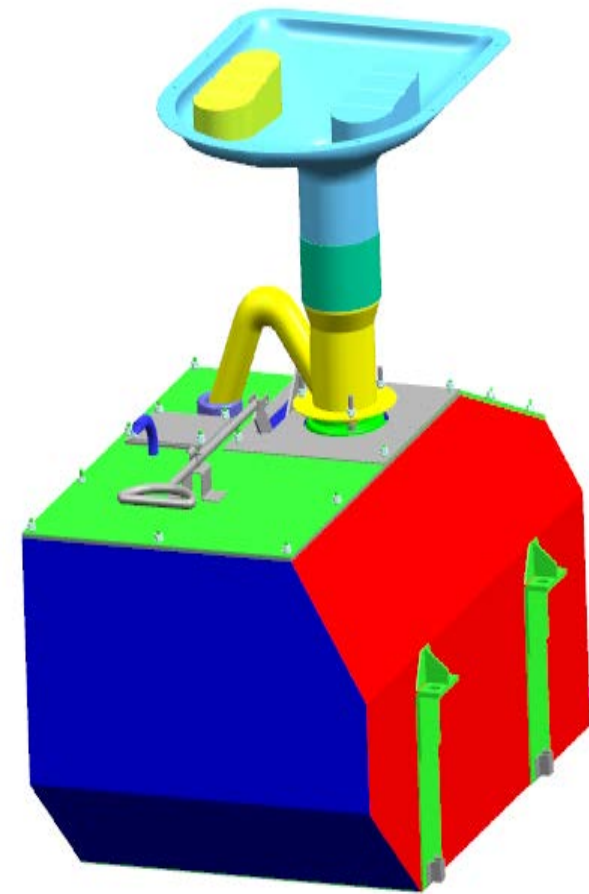


PROMOTING CLEAN LINESS –

BIO-TOILETS IN PASSENGER COACHES



- Indigenously developed Bio-Toilets for clean environment at stations/ Tracks.
- Eliminates direct discharge & safe disposal of human waste
- Bacteria and effluent are non-toxic
- A step towards “ स्वच्छ रेल - स्वच्छ भारत ” अभियान
- Four stations ‘**green stations**’ planned in 2015-16. Will have trains with only bio-toilets. First station Okha. Followed by Porbander, Rameshwaram, Katra





Solar Plant at RCF, Rae Bareli



2MW Solar Power Plant installed generating 2.8 million units of electricity annually.

Entire factory is running on solar power.





Solar Plant at RCF, Rae Bareli



Solar Panel provided on the roof of NG coach at Kalka Workshop for battery charging



Piped Solar Light Inside Rail Coach Factory, Raebareli





INTEGRAL COACH FACTORY, CHENNAI

Wind Mill 10.5 MW



- ICF won International **“Golden Green Award” 2014** for sustainable green energy initiatives.
- RCF/Kapurthala awarded **Golden Peacock Environment Management Award – 2014.**



QUALITY, ENVIRONMENT & OCCUPATIONAL SAFETY CERTIFICATION

Certificate No. QMS-K12591

KBS Certification Services Pvt. Ltd.
414-424, Om Shubham Tower, Neelam Beta Road,
N.I.T. Faridabad - 121 001, Haryana, India
E-mail : office@kbsindia.in Website : www.kbsindia.in

Certificate of Registration
Awarded to

DIESEL LOCOMOTIVE WORKS

Diesel Locomotive Works, Varanasi - 221 004, (U.P), India.




Quality Management System has been successfully assessed & found to be in accordance with the requirements of the standard

ISO 9001:2008

Scope of Certification

Manufacture and Supply of Diesel-Electric Locomotives, Generating Sets and Spares

Initial Certification : 15 Mar, 2013
Validity : 14 Mar, 2016

   
Kaushal Goyal
Managing Director

For current validity of the certificate, visit : www.kbsindia.in

F-46, Version 2.00, April 2010

Certificate No. EMS-K12019

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414-424, Om Shubham Tower, Neelam Beta Road,
N.I.T. Faridabad - 121 001, Haryana, India
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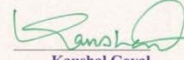
Environmental Management System has been successfully assessed & found to be in accordance with the requirements of the standard

ISO 14001:2004

Scope of Certification

Manufacture and Supply of Diesel-Electric Locomotives, Generating Sets and Spares

Initial Certification : 15 Mar, 2013
Validity : 14 Mar, 2016

   
Kaushal Goyal
Managing Director

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Certificate of Registration
Awarded to

DIESEL LOCOMOTIVE WORKS

Diesel Locomotive Works, Varanasi - 221 004, (U.P), India.

Occupational Health & Safety Management System has been successfully assessed & found to be in accordance with the requirements of the standard

OHSAS 18001:2007

Scope of Certification

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F-46, Version 2.00, April 2010

- All established Production Units fully certified
- 21 workshops certified for quality & environment
- Full coverage of Workshops & PUs planned in 2015-16. Diesel loco sheds and C&W depots also to be covered phase-wise



Indian Railways & Social Sectors

- Indian Railways is requisiting private equity through individuals, NGOs, trusts, charitable institutions, corporates, etc. to provide passenger amenities such as battery-operated carts to facilitate movement for senior citizens and differently abled, at stations.
- With the aim of helping visually impaired passengers travel independently, features like tactile maps and train schedules in Braille were unveiled at Mysuru station
- Kisans and Industrial Laborers traveling in Indian Railways to visit agricultural/industrial exhibitions are given 25% rebate in 2nd and SL class fares on the railway reservation. The farmers can avail 33% kisan concession in 2nd and SL class fares.



IR and Social Service

- Rail tourism is on the anvil, with emphasis on the introduction of eco-tourism and education tourism in the North-eastern states.
- Special pilgrim circuits such as the Devi Circuit, the Jyotirling Circuit, the Jain Circuit, the Christian Circuit, the Sufi Circuit, the Sikh Circuit, the Buddhist Circuit and the Temple Circuit.
- Accounting for about one per cent of the GNP , It accounts for six per cent of the total employment in the organised sector directly and an additional 2.5 per cent indirectly through its dependent organisations. It has invested significantly in health, education, housing and sanitation. With its vast network of schools and investment in training, the Indian Railways plays an important role in human resource development.



Ensuring Mass Connectivity

- The Railways has developed indigenous capacity for rolling stock manufacture, including state-of-the-art electric and diesel locomotives and high-speed passenger coaches. It has introduced high-speed Rajdhani and Shatabdi Express trains and Mass Rapid Transit Systems in the metropolitan areas.
- During the period of 2012-17, Mass Rapid Transit Systems (MRTS) projects are being planned in Ahmedabad, Bengaluru, Hyderabad, Chandigarh, Chennai, Delhi, Jaipur, Kochi, Kolkata, Mumbai, Patna, Pune, Lucknow and Surat through the PPP model.



Thanks