Program for HoDs – F&A Dept
16th May 2016
NAIR , Vadodara

"Emerging role of FA&CAOs in the changing milieu of Indian Railways"

A.Venkateshwar , IRAS '79
Consultant , Ministry of Railways

In this discussion .....

EXTERNAL

- *So, what is changing in the IR environment ?*
- *Budget 16-17 – Vision , Missions , Theme , Strategy*
- *Rail Regulatory Authority ....draft concept*
- *LT changes (3-5 yrs) & ST changes (1-3 yrs) in IR*

INTERNAL

- *Role of the FA&CAO in the emerging scenario*
- *Attitudinal change in F & A Dept*
- *Alignment and cascading of goals across orgn.*
- *Dept. spread - Standardized KRAs*

So, what is changing in the IR environment ……

- *Vector / intensity of business operations of the organization.*
- *Impact of social media on performance delivery.*
- *Competency levels and skill sets of personnel.*
- *Advanced info./data processing / convergent technologies .*
- *Increasing need for data warehousing / mining / analytics*
- *Increasing demands arising from public awareness.*
- *Evolving need for regulatory environment .*
- *Benchmarking / adoption of best practices (our Joneses !).*

Vision for Indian Railways ver 2016

" By 2020, (8) long-felt desires of the common man to be fulfilled -

- reserved accommodation on trains available on demand,

- time tabled freight trains,

- high end technology to improve safety record,

- elimination of all unmanned level crossings ,

- improved punctuality (95%) ,

- higher average speed of freight trains - 50 (g) / 80 (p) kmph),

- semi high speed trains running on the golden quadrilateral,

- zero direct discharge of human waste."

Mission Mode activities in next 5 Years

- *Mission 25 T - 10- 20% on 25T in 16-17 to 70% in 19-20*
- *Mission Zero accident – in 3 yrs no LCs (BG) ; 100% TCAS*
- *Mission PACE - Procurement & Consumption Effy*
- *Mission Raftaar – 2x – goods ; +25 kmph - M/E in 5 yrs*
- *Mission Hundred - 100 sidings in 2 yrs (85% share)*
- *Mission Capacity utilization - post DFC blueprint*
- *Mission beyond book keeping - Accrual Accounting*

(Right accounting --> costing --> pricing --> outcomes)

Theme of the Railway Budget 16-17

- *Overcoming challenges - (IR's share in freight traffic has dropped to 36% from 62% (1980-2012)*
- *"Reorganize, Restructure Rejuvenate IR"*
- *' Chalo, Milkar Kuch Naya Karen' -*

Cooperation , Collaboration , Creativity and Communication

Long term Strategy

- *Nav Arjan – New revenues*

  - *non convt . freight policies , monetizing assets –software , stations , PUs , PSUs*

- *Nav Manak – New norms*

  - *KRAs , data analytics, outcome budgeting , perf. costing)*

- *Nav Sanrachna – New Structures*

  - *RDA , reorg RB , RPIO , HoldCo , SRESTHA , SUTRA , Innovation / Start Up Hubs ;*

  (Rail Development Authority ; Rly Plg and Investment . Orgn. ;
  Spl. Rly Estb.for Strategic Tech. & Holistic Advancement ,
  Spl. Unit for *Transp. Research and Analytics)*

Rail Development Authority of India (draft concept)..

- *MR's Budget Speech - "It is now proposed to set up a mechanism, which will be entrusted with making regulations, setting performance standards and determining tariffs. It will also adjudicate on disputes among licensees/private partners and the Ministry, subject to review in appeal".*
- *Phase I – Independent dispute resolution body for SPVs ,Concessionaires PPP players)*
- *Phase II – Determine tariffs (cost structure , productivity , subsidy support , market forces , RRT) ; promote private investments (thru licenses , level playing field , penalties ,transparency in regulation) ; set service / performance standards;*
- *Phase III – May cover Safety & Claims and subsume CRS , RCTs*
- *Regulator will NOT - make policy , execute projects / oversee operations ; propose budgets / manage expenditure , set safety and technical standards*

LT Changes in IR (next 3-5 yrs) ... Rail Regulator

ISSUE	IMPACT on IR	SKILLS reqd for FA&CAOs
Licensed business environment	*Commitment to perform as required*	*Governance ; regulatory law ; will to comply ;*
Competition between multiple players	*Pricing strategies Viability of operations*	*Perf. Costing , Risk Mgmt for sustaining growth ; innovation*
Regulatory budgeting / accounting	*Transparency ; stakeholder focus*	*Market research ; innovative financing ; compliance systems*
Setting performance standards	*Customer focus ; process control*	*Benchmarking ; Internal Audit ; Review /Monitoring mechanisms*
Efficiency gains	*Resource optimization*	*Data analytics ;productivity tests*
Accounting reforms	*"Truer & fairer" picture*	*Commercial accounting principles ; OB and PC**

* Outcome Budgeting & Performance Costing

ST changes in IR…(next 1-3 yrs)…
……honing financial skills of FA&CAOs

- *Accounting reforms –*

  - Cash to Accrual accounting (we vs they)

  - Outcome Budgeting (understand the business)

  - Performance Costing (design and delivery)

- *Institutional Funding (LIC loan)*

  - to help decongest network , increase throughput , generate internal resources ; (but better project monitoring to be done @ IT)

- *Domestic / FD / PPP Investment in Railways*

  - due diligence as per sectoral & DIPP guidelines

  - Project Feasibility Report - "involved " vetting

  - RFQ , RFP , CA based on models of RB

  - Bid process management

Emerging role of the FA&CAO ..”Entrp. Risk Mgmt.”

- *“Chief Risk Officer’*

  - Risk identification , prioritization. , mitigation , review

- *“Internal Auditor” (as against internal check)*

  - less of transaction audit (thru more of IT based systems

  - more of processes , risk impact , process improvements

- *“Process Facilitator / System Designer”*

  - help in formulation and testing of processes / systems for risk mitigation / risk transfer.

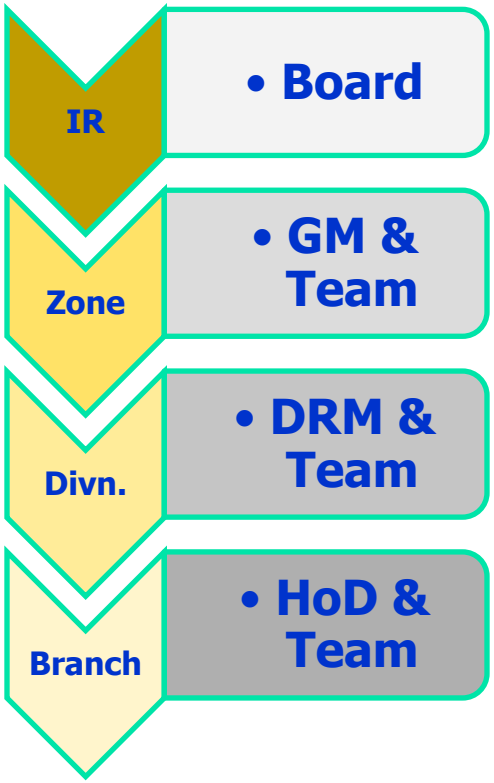
Attitudinal change in F & A .....

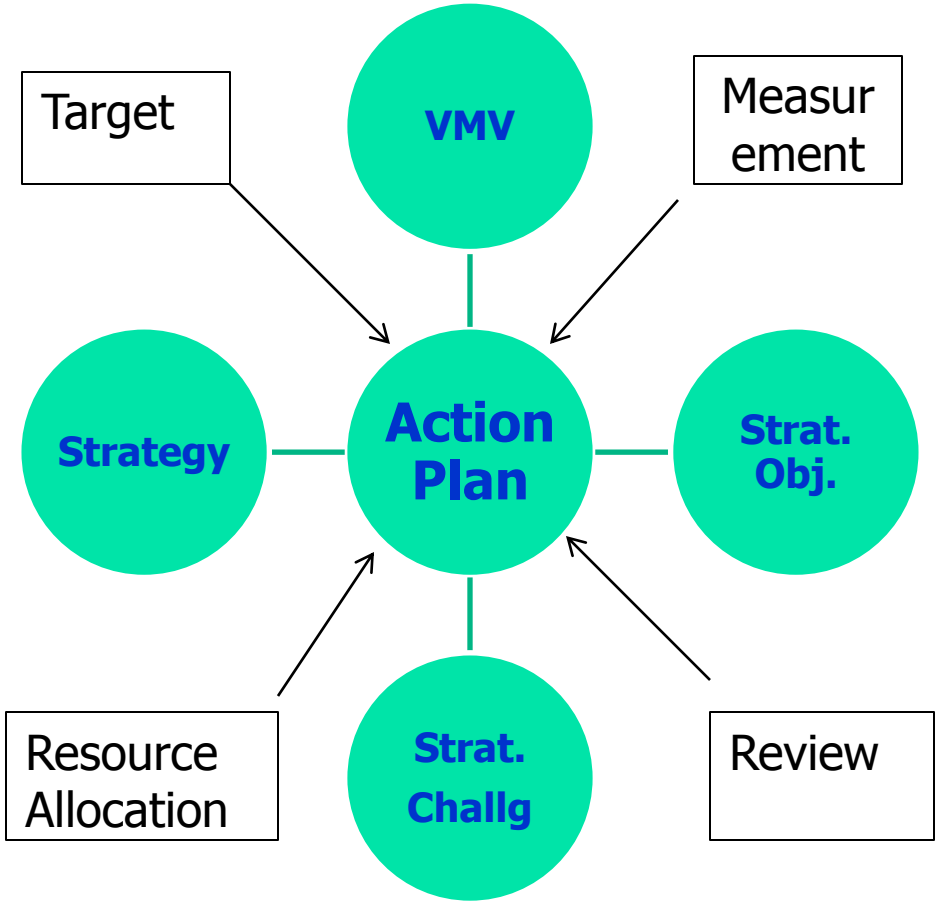
- *From "Concurring" to "Facilitating"*
- *From " Evaluating " to "Enabling".*
- *From "Compiling / Reporting" to "Reviewing / Analysing" .*
- *From "Reactive" Supporting to "Proactive" Proposing*
- *From "What can I do ?" to " I can help in doing it"*

- *Growing concern amongst executives of the relevance of the F&A Dept.*
- *Likelihood of restructuring railway management*

Alignment & Cascading of goals and outcomes

Action Planning / Goal Setting essentials





Departmental spread – need for alignment

- *Current Vertical Heirarchy – 3 administrative levels in each zone - HAG – SAG – SG/JAG*
- *Current Horizontal Spread – 17 Zones ; 6 PUs , 5 Others ; approx . 68 divisions ; 45 workshops ; 18 Constn orgn.*
- *Functional spread – 5-7 categories at SAG / JAG levels*

  - Admn & Estb. ; PF & Pension ; Finance , Exp. ; Books & Budget ; Cash & Pay ; Traffic ; W&S ; Constn ;
- *Need to bring more clarity to "role and responsibility"*
- *Need to bring in appropriate alignment , both H & V.*
- *Service level agreements to be built up with the executive.*

Standardization of Role / Post based KRAs :

- *At least six key result areas (KRAs) in each role / post may be standardized with defined PI and UoM.*
- *These KRAs must be aligned with the Dept goals and facilitate correlation of physical and financial measures .*
- *These six KRAs may constitute about 50% of the self assessment part of the ACR of each incumbent of the post across the Railways.*
- *Eg. FACAO/T of all zones may have the same KRAs but targets /initiatives / action plan to meet them , may vary.*
- *Target setting (how much) and initiatives (how) to achieve the target can be agreed by appraise & appraiser.*

Thank You

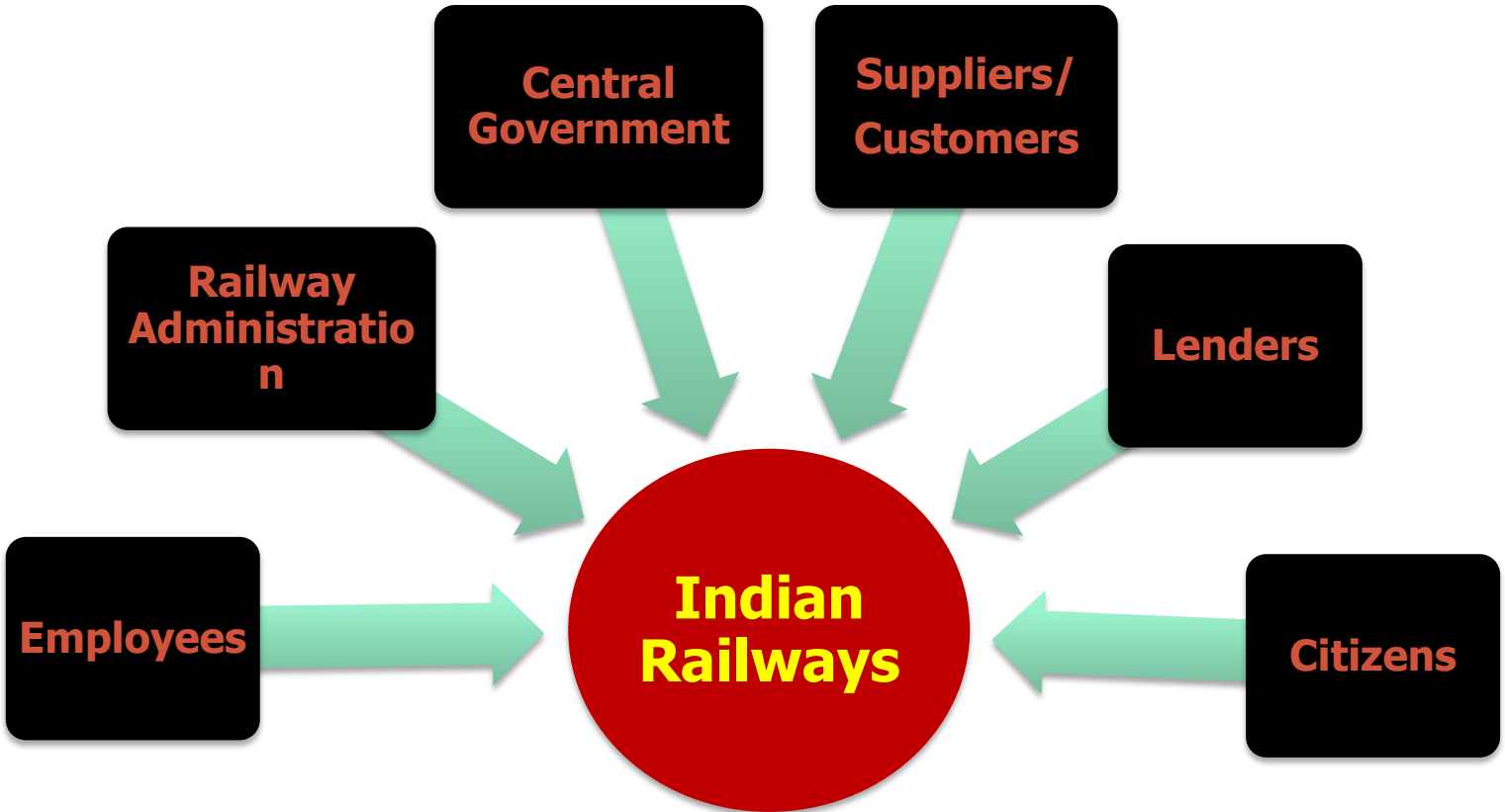
ACCOUNTING REFORMS
DEPRECIATION POLICY
e-ASSET REGISTER
& TAXATION ISSUES

Raj Kumar Manocha
FA&CAO/IT/NR

"I just wanted to be a businessman, and to me the best way to understand business was to be an accountant."
-Aubrey McClendon

Accounting is a the language of business.
The beauty of language lies in correct ,true and fair communication of Financial information to intended **Users, readers and Stakeholders.**

Stakeholders in Indian Railways



Accounting System

- Types of Accounting Systems
  - Cash Based
  - Modified Cash Based
  - Accrual Based – Double accounting system
- Each system of accounting has its merits and demerits.
- Accrual system has its inherent strengths of holistic and true and fair reporting
  - Accrual system
  - Increasingly adopted across the globe by
    - Business organizations
    - Economic bodies
    - Govt bodies & Entities

IR Financial Accounting System

- **Indian Railways, a department of Government of India follows the cash based Government accounting system.**
- **The set of accounts maintained and compiled as per Government accounting regulation are collectively referred to as 'Finance Accounts'**
- **These include**
  - **Receipt and Expenditure Account**
  - **Annual Appropriation Accounts**

Limitations in IR Accounting System

- Does not provide information about
  - Full holistic picture of
    - Railways Surplus/Income from operations
    - Railways Finances
    - Railways Assets and Liabilities

- Profit or Loss Revenue Segment and Lines of Service within a segment
- Activity Based Costing for diverse field activities
- Profitability of different operations, routes/sections
- Availability of cost data in key performance areas like Operations,Maintenance,Infrastructure segments,Construction
- Asset creation and Post Asset commissioning.
- Tracking of Expenditure to desired outcomes

The Present Accounting System

Hiding Liabilities

Hidden Assets

Financial Accounting System

- **Accounting system must be like a mirror.**
  - **Concealing nothing**
  - **Revealing all True, Fair, Complete & Objective**
  - **Reliable**
  - **Understandable**
  - **Comparable**
  - **Standards Compliant**

GOOD ACCOUNTING GOVERNANCE

To meet the Good Financial Reporting requirement the accounts of a Zonal Railways should be maintained on accrual mode of accounting under double accounting system.

The Financial accounts compiled should as per GAAP , Accounting Pronouncements of GASAB.

The following Annual Financial Statements for a Zonal Rly need to be compiled under the accrual mode of accounting.

- **Statement of Income (Profit & Loss Account)**
- **Statement of Financial Position (Balance Sheet)**
- **Cash Flow Statement**
- **Disclosure of Accounting Policies and Notes to Accounts**

Hence , the need for Accounting Reforms

STATUS OF ACCOUNTING REFORM PROJECT

•PILOT STUDY ON ACCRUAL ACCOUNTING AJMER DIVISION & W/S UPTO CERTAIN MILE STONES (TRIAL BAL) IS OVER.

•PILOT STUDY ON ACCRUAL ACCOUNTING & MANAGEMENT ACCOUNTING AT RCF,
KAPURTHALA, HAS COMMENCED AND PRGRESSED ON MANY MILESTONES.

• ACCRUAL ACCOUNTING PILOT STUDY AT NWR,HQ i.e PREPARATION OF ANNUAL FINANCIAL STE IN ACCRUAL MODE IS IN AN ADVANCED STAGE OF COMPLETION. TARGET 30.6.16

•CONCEPT PAPER ON PERFORMACE COSTING AND OUTCOMING BUDGETING IS READY(DRAFT ALREADY SUBMITTED) ,DESIGNING TO BEGIN SOON.

•CAPACITY BUILDING AND TRAINING OF OFFICIALS AT C-TARA AND NAIR IN PROGRESS.

•RECONSTRUCTION OF FIXED ASSET REGISTER IN ALL INDIA RAILWAY UNITS & e-AsR IS IN PROGRESS.
•NODAL OFFICERS IN ZONAL RAILWAYS NOMINATED AND CORE TEAM HAVE BEEN FORMED.

PERFORMANCE

COSTING

&

OUTCOME

BUDGET ANNOUNCEMENT RAIL BUDGET 2015-16

- **The Hon'ble Minister of Railways in the Budget speech Rail Budget 2015-16 stated as under:**

"We have limited resources and thus must ensure that all public expenditure results in an optimal outcome. We, therefore, intend to set up a working group to modify the present system of accounting, to ensure tracking of expenditure to desired outcomes. The data on costing would be available online including costs incurred on constructing, augmenting, maintaining and operating railway lines. This would also help in undertaking post asset commissioning evaluation studies."

In pursuance of the above objectives, a preliminary study of the existing Financial Accounting, Costing, Budgeting, IT and other related systems at various field units of Northern Railway located in and around Delhi and a draft concept paper has been submitted by ICAI ARF. The concept paper is being refined based on suggestion of Advisory body and working group. **Designing of proposed system is in progress.**

THE PROPOSED MANAGEMENT ACCOUNTING SYSTEM

The discipline of **Cost accounting around the world** has contributed significantly in enabling managerial and financial decision making in most prudent manner in all application areas of a business organization.

The proposed system is an integrated IT enabled state of the art system of cost accounting which will cover not only the train operations but shall also have Activity Based Unit Costing **(ABUC)** as a functional module. This ABUS module shall cover all direct and indirect fields and allied activities under the detailed cost centre framework. The ABUS Module shall enable **Train costing, cost control, performance based Outcome budgeting and Responsibility Accounting.**

THE COST CENTER FRAMEWORK

Expenses of SSE/P. Way
Direct Cost Center
Expenses of SSE/Works
Expenses of SSE/Bridge
Expenses of SSE/TRD
Expenses of SSE/Train lighting
Expenses of SSE/AC maintenance
Expenses of SSE/Signal
Expenses of SSE/Telecom
Expenses of Station Manager
Expenses of SM and Operating control
Expenses of Chief Ticket Supervisor
Expenses of Chief Ticket Booking office
Expenses of Parcel office
Expenses of Luggage room
Expenses of Chief Goods Supervisor

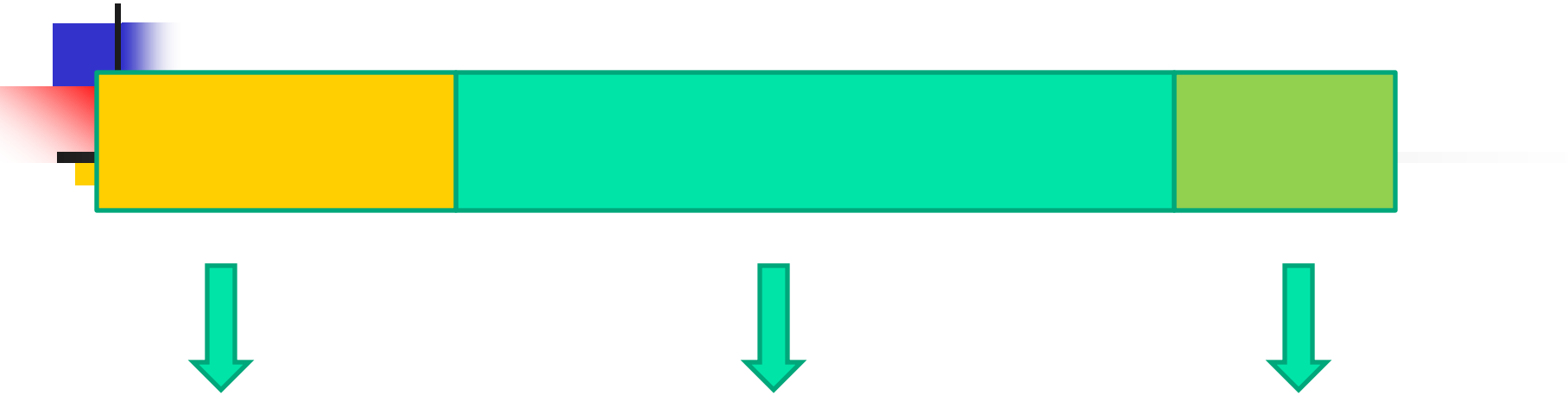
Expenses of DRM Indirect
Cost Center
/CWM/GM office/

COST CENTRE	MEASURABLE OUTPUT
S*SE/Works* maintained	Per Sq Meter Plinth area
SSE/Permanent Way (P.Way)	Equated track kilometer
SSE/Bridge	Per span maintained or per meter linear length
SSE (ROB)/ (RUB)	Per ROB or RUB
SSE/Signal	Per equated signal maintained
SSE/Telecom	Per telephone line maintained
or	Per kilometer cable maintained
SSE/Carriage	Per coach maintained
SSE/Wagon	Per wagon maintained
SSE/AC	Per AC coach maintained
SSE/Electrical	Per coach maintained
SSE/Train Exm	Per coach maintained
Station Manager	Number of trains passed

Centralised Traffic Control (CTC)	Number of originating trai
SSE/Parcel	Number of parcels booked
Train Examiner (TXR)	Number of trains attended
Diesel Shed	GTKM/Engine Kilometer ec
Freight	NTKM/GTKM
Mixed Train	Ratio between passenger/
Shunting Loco	Shunting kilometer
Workshop	GTKM earned

THE PROPOSED CHART OF ACCOUNT

Capturing of Data Transaction Recording Stage



4 Digit for Accrual Accounting

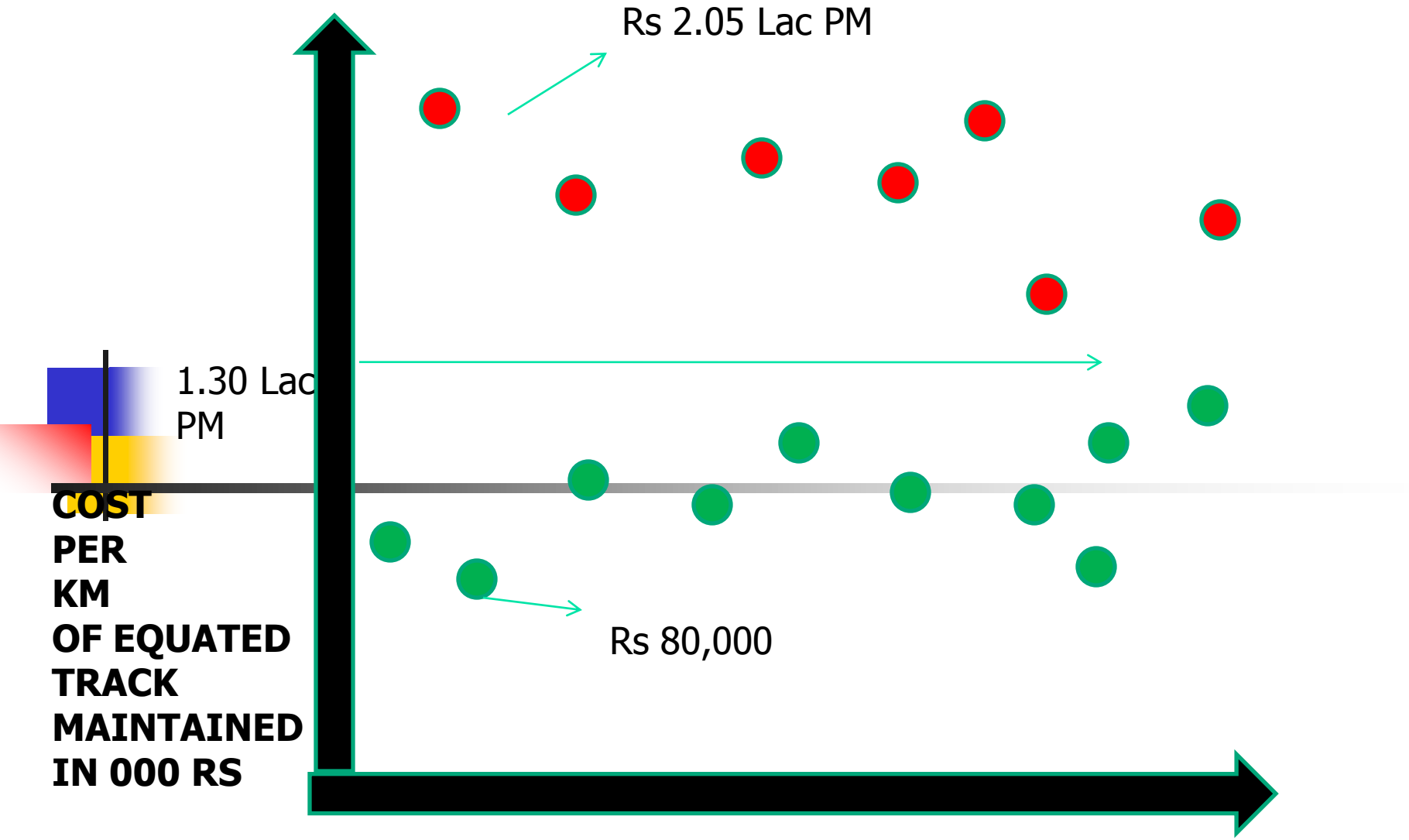
8 Digit Existing

2 Digit for Cost Center

COST SHEET OF SSE/P.WAY MONTH ----, OUTPUT----- ETKM, ACTIVITIES--,

DIRECT COST	INR	**VA**
TRACK MATERIAL		
OTHER DIRECT STORES		
CONTRACT OUT EXP		
MANPOWER COST		
MACHINE COST		
OTHER EXP		
PRIME COST		
INDIRECT COST		
MANPOWER		
OFFICE EXP		
TRANSPORT EXP		
OTHER INFRSTRUCTURE COST		
GROSS COST		
CREDITS		
NET TOTAL COST		
COST PER ETKM*		

*** DETAILED ANALYSIS FOR EACH ELEMENT OF COST CAN BE DONE SEPAR**


Rs 2.05 Lac PM
1.30 Lac PM
COST PER KM OF EQUATED TRACK MAINTAINED IN 000 RS
Rs 80,000

DETAILED COST DISSECTION AND ANALYSIS(DSD &ZERO BASE REVIEW(ZBR)

COST PER ETKM IN A RLY DIVISION VARIED FROM Rs 80,000 to Rs 2.05 La

AVERAGE MEAN COST Rs 1.30 Lac PER ETKM

HIGH COST SSE/P.WAY IDENTIFIED SUBJECTED DSDA&ZERO BASE REVE
FINDINGS DETAILED BELOW

OVER USUAGE OF MATERIAL,WASTAGES,REJECTION,BAD WORKMANSHIP,T
QUALITY OF MATERIAL SUPPLIED,HIGHER THROUGHPUT,GRADIENT, OVERS
OUTSOURCING WITH INHOUSE MANPOWER AVAILABILITY,HIGHER OT,HIG
EXP,ABSENTISM, REDUNDANT NON-VALUING ACTIVITIES,NON PERFORMIN
PERFORMING ASSETS, ACCUMULATED SCRAPS,LEAKAGES ,WEAK INTERNAL

CONTROLLABLE - NON CONTROBLE FACTORS

COST CURTAILMENT TARGET

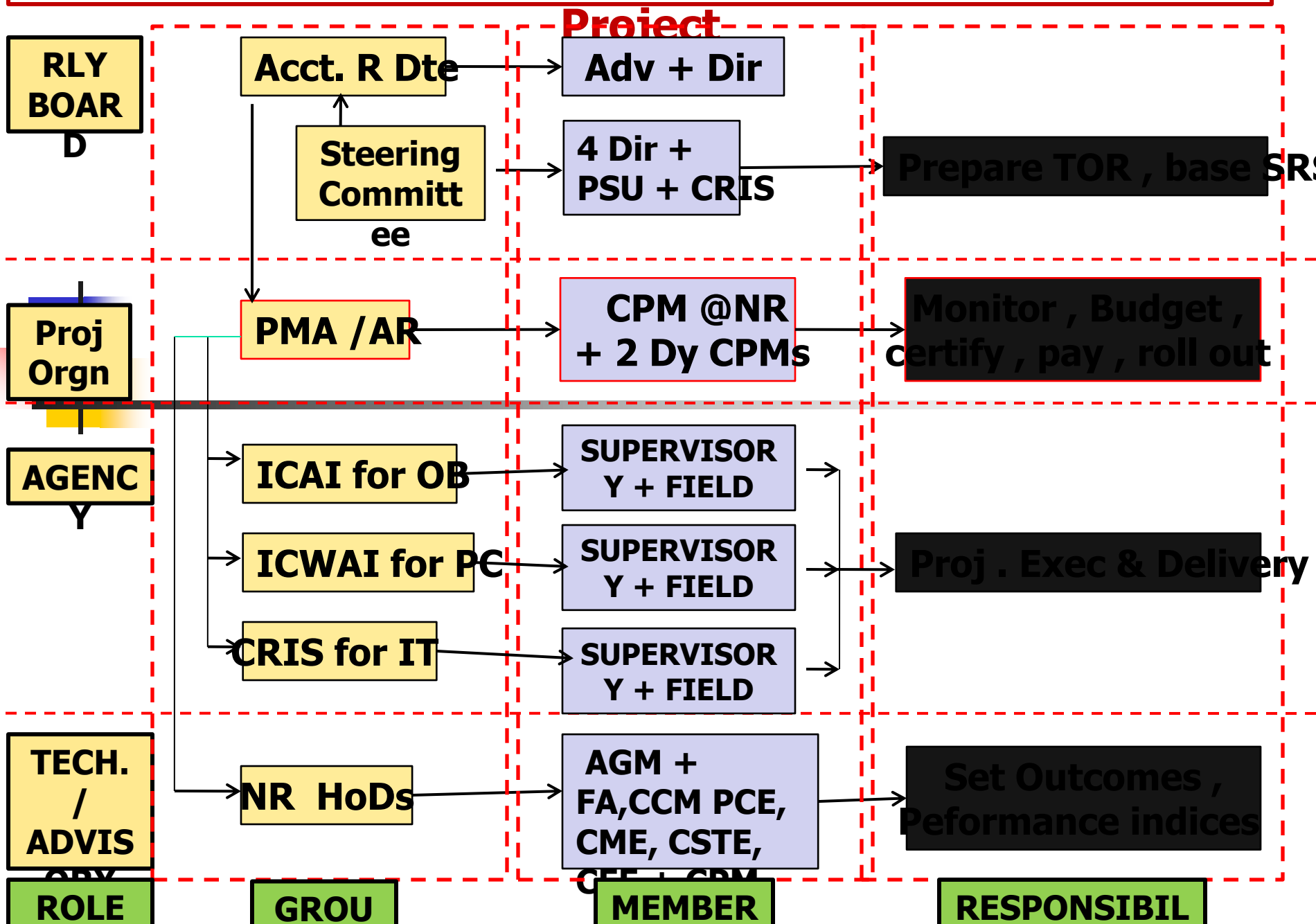
OUTCOMES FOR NEXT BUDGET YEAR

IR ACCOUNTING REFORMS - STATUS AND ACTION PLAN (27.4.16)

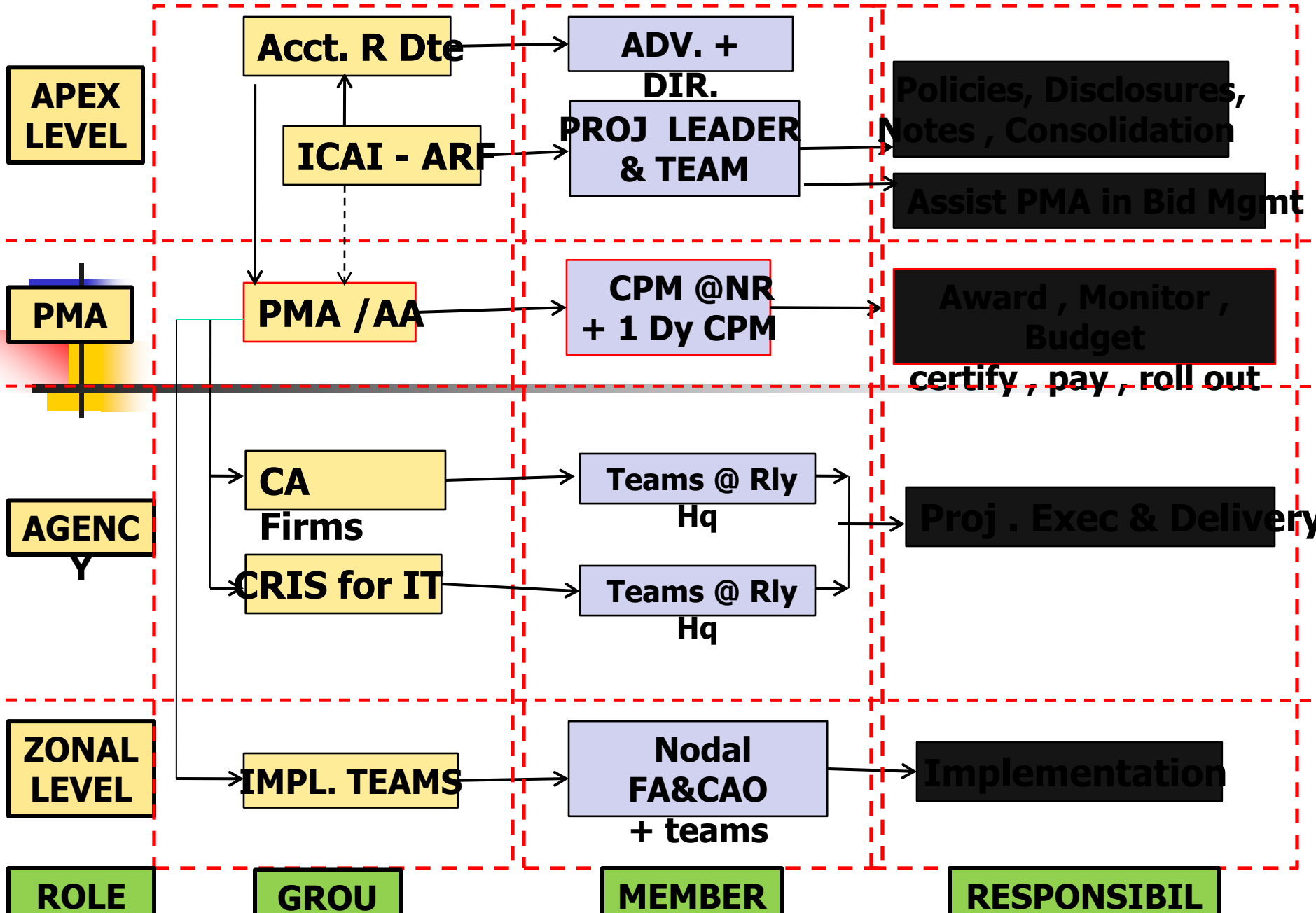
- **Accrual Accounting -**
  - Bl.Sheet , P&L A/c , disclosures & notes of NWR – complete by Aug 2016
  - Simultaneous Roll Out on 15 Zonal Rlys & 6 PUs - complete by Sept 2017

- **Outcome Budgeting & Performance Costing**
  - Project Orgn headed by CPM @ New Delhi – By May 2016
  - Implementation partners (on nomination basis) will be –
    - ICAI for Outcome Budgeting ;
    - ICWAI for Performance Costing
    - CRIS for IT development / support -
  - Live studies on NR - GM & team to steer outcomes / performance indices.
  - Award of Implementation Contracts - Aug 2016
  - Finalisation of functional program specs - Feb 2017
  - Live studies/reports on NR - Dec 2017
  - Roll out on all Rlys - Mar 2018

STRUCTURE – Outcome Budgeting & Perf. Costing



STRUCTURE – Accrual Accting . Roll out on Rlys / PUs



Depreciation Accounting Policy

Depreciation is the systematic reduction in the recorded cost of a fixed asset due to wear ,tear and obsolescence.
The Best accounting practices in Rail Industry

At present Provision for Depreciation in IR is need based and adhoc. Is Provision adequate?

Is Exp on IOH,POH and Special Repair Revenue Exp as per GAAP?

Present Rate2.37% (7725/325892) - Year 2014-15

Dep Rates (Yr) as per Companies Act 2013

Railway Locomotive,Rolling stock	15
Electrical Installations	10
Plant & Machinery (Cont process)	15
Telecom Cables	18
Office Equipments	5

ED Technical Committee on e-Asset Register reviewing existing practices including codal life.

Depreciation Accounting Policy under compilation, shall be approved by Railway

FINANCIAL DIGONOSTICS

ASSET TO REVENUE/TURNOVER RATIO

Chinese Railway group Ltd

Transport Corporation of India Ltd

Konkan Rly Corporation Ltd

Indian Railways

FACT SHEETS ABOUT INDIAN RAILWAYS'S ASSET FLEET

- IR Assets spread out in diverse field location, under and over the ground
- No Proper Fixed Asset Register(FAR) in prescribed format under GAAP
- Depreciation is being provided on adhoc basis
- No reconciliation between FAR and Block Account source of Finance wise
- IR Assets in usage 24*365 frequent repair ,upgradation and retrofitment
- No provision for impairment and damage

FIXED ASSET REGISTER (FAR)

- Correct Physical Enumeration with clear location and custodianship
- Correct valuation as per GAAP
- Correct Depreciation Accounting as per GAAP
- Provision of accurate Replacement reserve for inflation and improve
- Reconciliation with Block Account for rationalisation
- Correct accountal of released decommissioned assets
- Correct accountal of Profit or Loss on Sale/Auction of scrapped asset
- Must for Accrual accounting and Performance costing cum Outcome B

e –Asset Committee

To assist in compilation of Master of description for va categories of assets.

To assist and advise on scheme of codification.

To review and recommend codal life of various assets

To assist in compilation of Master Rate list of assets.

To identify scope of interface with other existing comp applications.

To assist in finalising functional specifications of e-As Application.

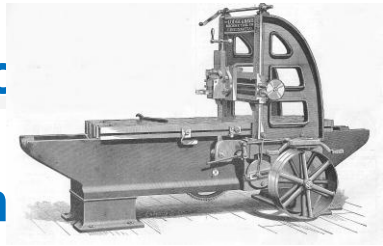
E-Asset Register (eAsR)
Centralised IT Application

FUNCTIONAL SPECS AND FUNCTIONALITIES

The Accounting Need,Depreciation Provision ,inputs for Replacement Po

The Asset Efficacy of use(Turnover ratio) analytics

The Asset to other Assets in Production/Maintainence ac



The Asset rational utilisation to Purchase requirement lin

The Asset economic history data analytics for purchase or repair decisi

The Asset to Opex link and cost control

The Asset to Productivity Test link

Any other Functionalty.

Relevant Taxation Issues

1.Restoration of CENVAT credit in respect of input services on both transportation of passenger and transportation of Goods by Indian Railways.

2. Reduction in the rate of excise duty from 12.5% to 6% on Parts of Locomotives, coaches and wagons.(86.07 of CETA)

3. Reduction in the rate of excise duty from 12.5% to 6% on Railway or tramway track fixtures and fittings; mechanical (including electro-mechanical) signaling, safety or traffic control equipment.(86.08 of CETA)

4. While explaining the Budget changes relating to service tax, the Department of Revenue (Tax Research Unit), Ministry of Finance vide D.O.F. Circular No. 334/8/2016-TRU dated 29.2.2016 has clarified that services provided by Indian Railway to Container Train Operators in the shape of haulage of their container train is a service of "*transport of goods by rail*" and tax shall be charged accordingly on the abated value. Accordingly the Indian Railway is allowed the facility to pay service tax on 30% of the gross amount charged by the Indian Railway from PCTOs and yet avail input

5.Wagons of Sub Heading 8606.92 of the Central Excise Tariff Act are now covered in the definition of "*capital goods*" for the purpose of allowing CENVAT credit to the manufacturer of final products or output service provider.

6. All capital goods having value upto Rs. 10,000/- per piece are being included in the definition of input. This would allow the assessee to pay take full CENVAT credit on such petty items of capital goods in the same year in which these items are received.

7.With a view to ensure the prompt payment of dues to Railways for use of the Railway assets; it is proposed to amend section 43B of Income Tax Act so as to expand its scope to include payments (Outsider dues) made to Indian Railways for use of Railway assets within its ambit.

8.Whereas the changes in service tax and Income tax shall come into effect w.e.f. the date of notification (after the Presidential Assent), the changes relating to Excise duty shall come into effect immediately from 1.3.2016. As per IRS conditions, the applicable Excise Duty rate in stores purchase contract shall be the new reduced rate. Accordingly, it is imperative that the new reduced Excise Duty rates are notified by the Stores Dte to the Zonal Railways and Production Units immediately.

EXCLUSIONS FROM CHAPTER 86

1.The expressions "parts" and "parts and accessories" do not apply to the following articles, whether or not they are identifiable as for the goods of this Section:
2.Machines or apparatus of headings 8401 to 8479, or parts thereof; articles of heading 8481 or 8482 or, provided they constitute integral parts of engines or motors, articles of heading 8483;

3.Electrical machinery or equipment (Chapter 85);

4.References in Chapters 86 to 88 to "parts" or " accessories" do not apply to parts or accessories which are not suitable for use solely or principally with the articles of those Chapters. A part or accessory which answers to a description in two or more of the headings of those Chapters is to be classified under that heading which corresponds to the principal use of that part or accessory

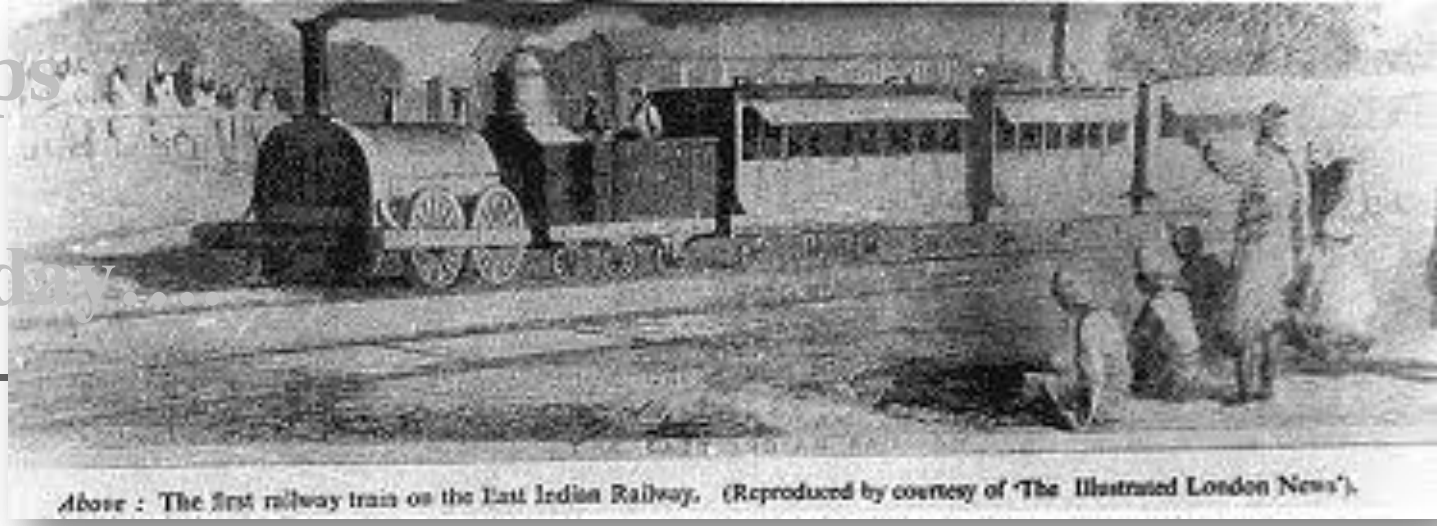
5.Railway or tramway sleepers of wood or of concrete, or concrete guide-track sections for hovertrains (heading 4406 or 6810);
(b) Railway or tramway track construction material of iron or steel of heading 7302; or
(c) Electrical signalling, safety or traffic control equipment of

FOR YOUR INVALUABLE TIME

Paradigm shift in financing Railway projects

16 May 2016

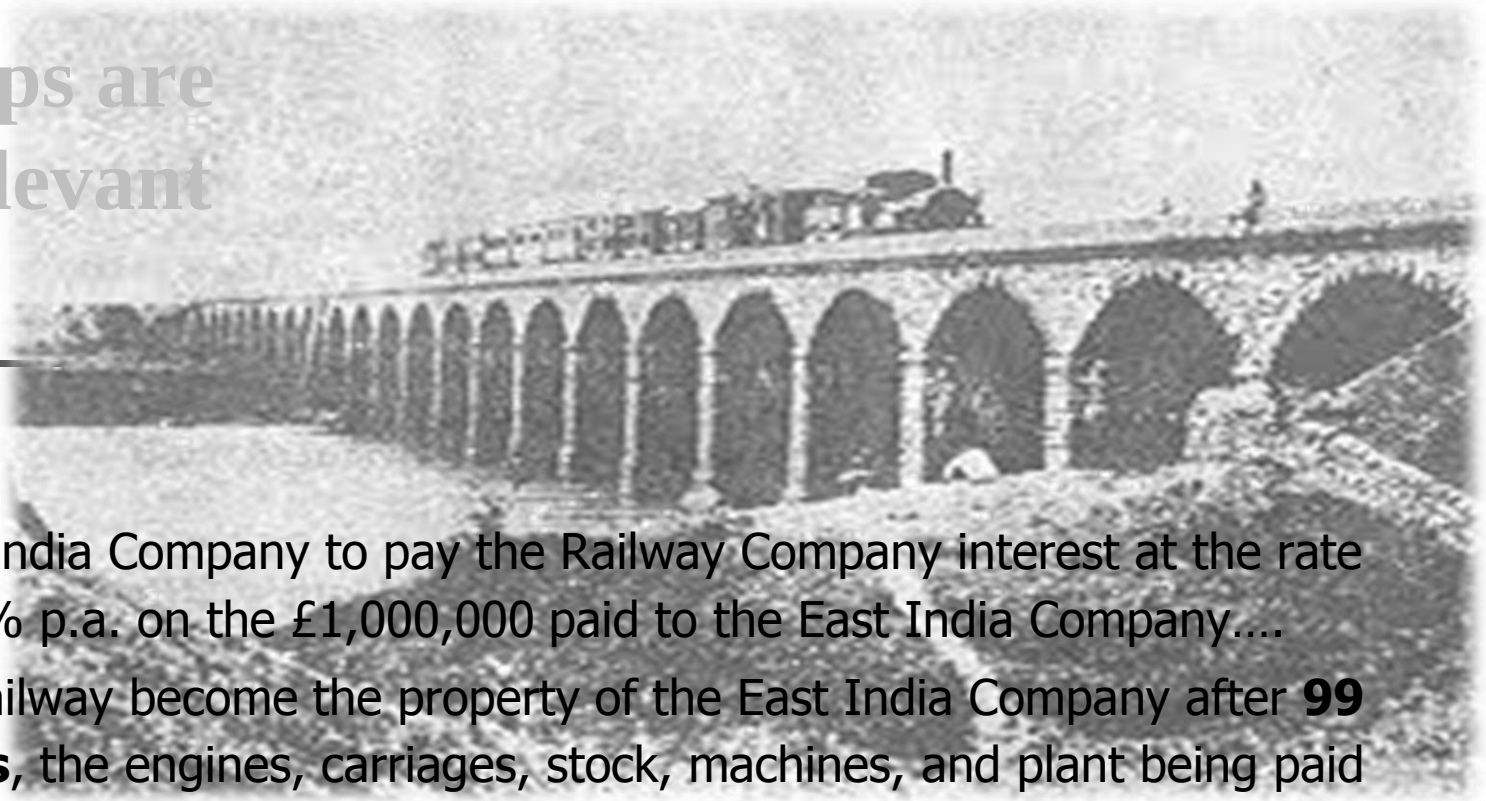
The 1st steps are equally relevant today…



Above : The first railway train on the East Indian Railway. (Reproduced by courtesy of 'The Illustrated London News').

- ***17th August 1849***, contract was signed between **East India Company** & **East Indian Railway Company** for construction " of a line of Railway from Calcutta towards the Upper Provinces," under the famous 'Guarantee System'.
  - East Indian Railway Company should pay into Treasury of East India Company, **£1,000,000**.
  - the East India Company should select the route and direction of a line of railway ……to be completed by the Railway Company, and opened for **the conveyance of passengers and goods** with all practicable speed.
  - the East India Company should provide the **land** required for the railway and for stations, offices ……
  - Railway Company should charge **fares** as should be approved by East India Company.

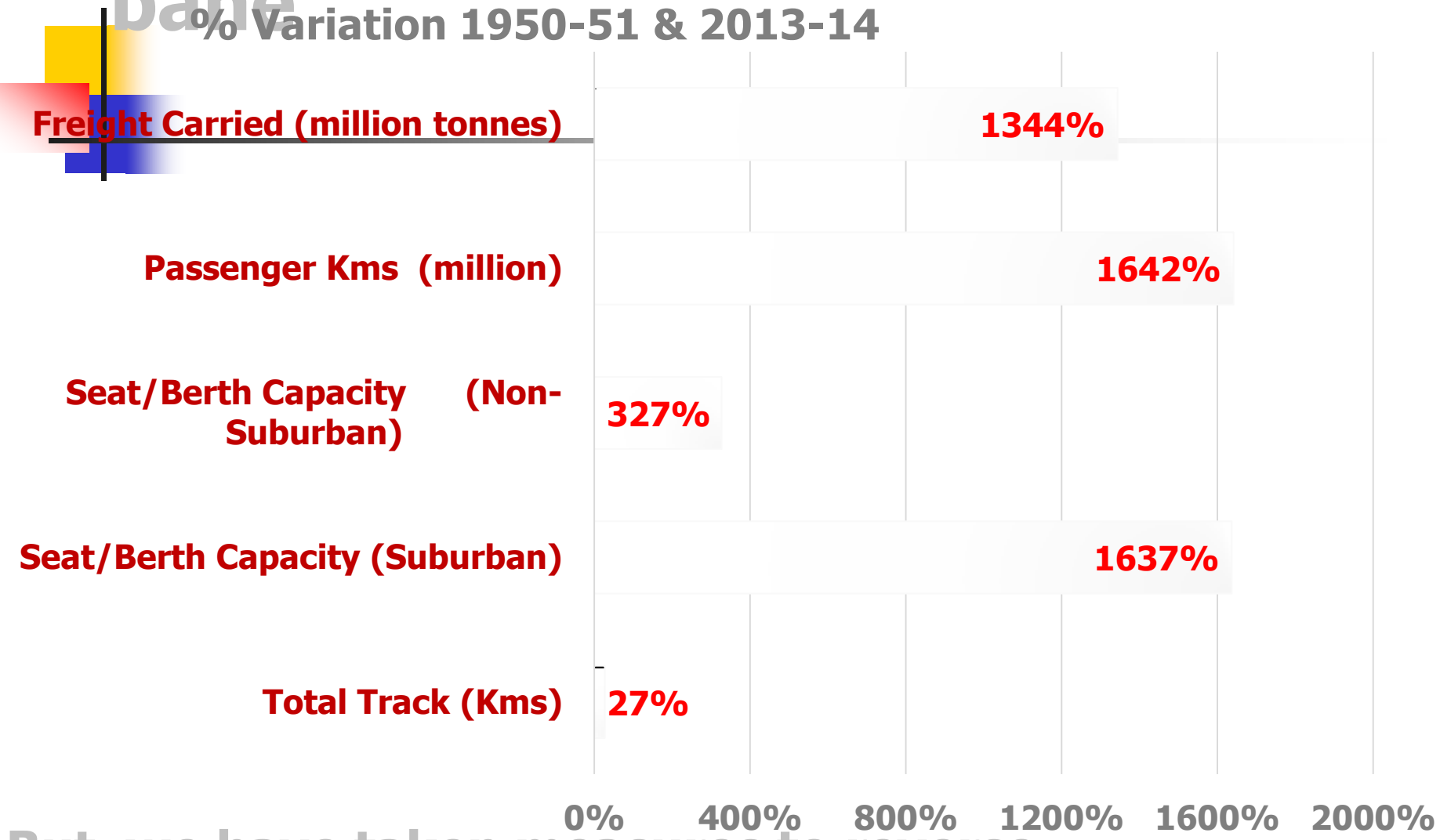
The 1st steps are equally relevant today….



- East India Company to pay the Railway Company interest at the rate of 5 % p.a. on the £1,000,000 paid to the East India Company….
- the railway become the property of the East India Company after **99 years**, the engines, carriages, stock, machines, and plant being paid for at a valuation.
- The railway also had the right to surrender the line to the East India Company and the East India Company had a right of purchase on certain conditions, at any time within six months after the expiration of the **first twenty-five years**.
- Another agreement was signed with the Great Indian peninsular Railway on 17th August, 1849 with the same terms and conditions

Since this spurt of development in pre-independence era, we have not expanded……

Under-investment has been our bane



But, we have taken measures to reverse this.....

सत्यमेव जयते

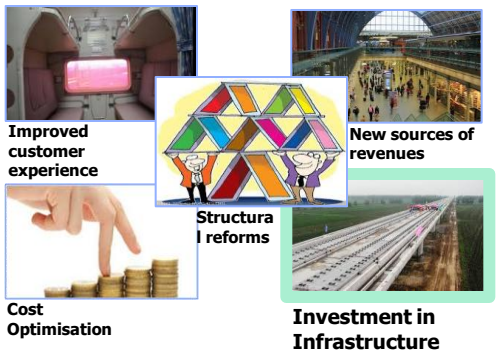
IR 2020

- Reserved accommodation on trains available on demand
- Time tabled freight trains
- High end technology for safety
- Elimination of unmanned level crossings
- Punctuality @ 95%
- Speed of freight trains @50kmph & Mail/Express trains @ 80 kmph
- Semi-high speed trains along the golden quadrilateral
- Zero direct discharge of human waste

- *Focus on Railway development as growth of the country dependent on growth in Railways – econor cannot grow if the carrying capacity is not*

सत्यमेव जयते

We have built a strong fleet of sanctioned projects to meet our 5 year investment target



5 year investment target – unveiled in 2015-16

Rs Crore

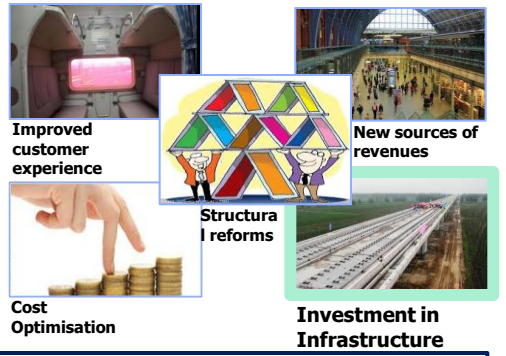
8,56,000

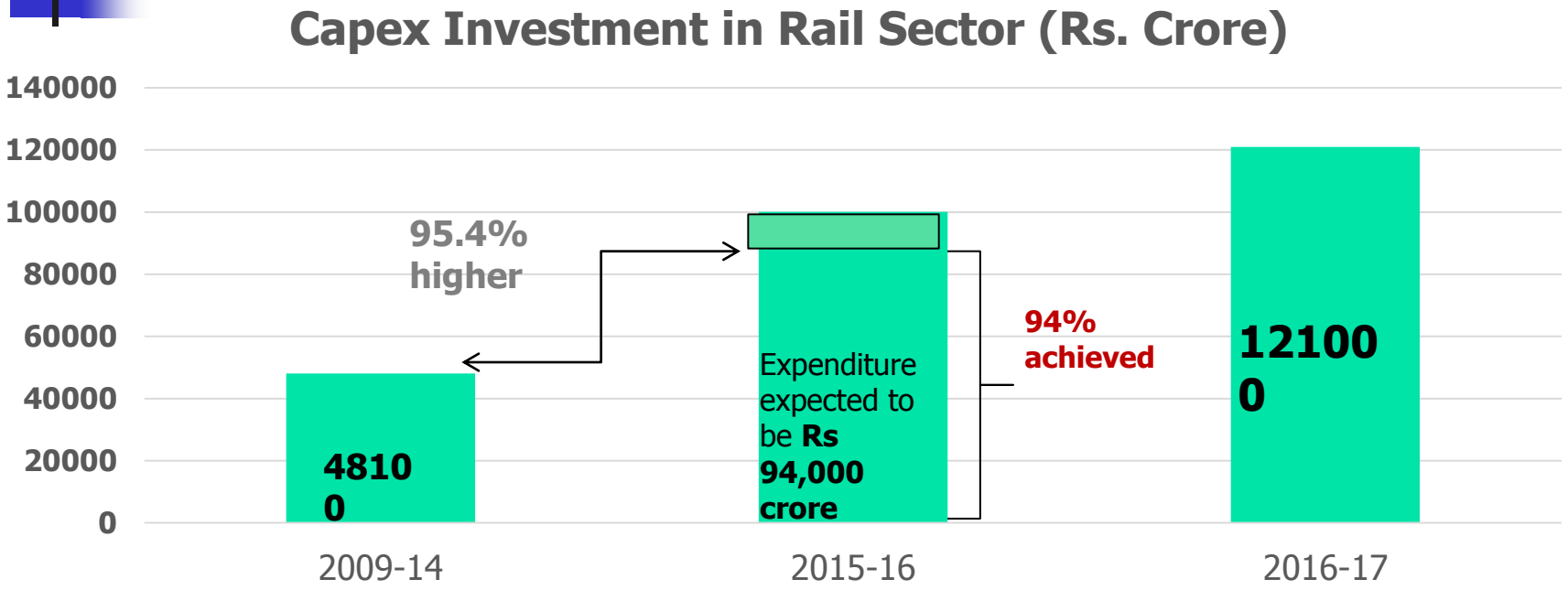
Approved investment plan as of today

Rs Crore

Capital expenditure in 2015-16	1,00,000
Balance cost of ongoing 'Network Decongestion and Capacity Augmentation'	2,35,000
New capacity augmentation and electrification works sanctioned in 2016-17	35,000
Rolling Stock Procurement 2016-17	20,000
PPP and Partnership projects	90,000
Dedicated Freight Corridor – Eastern and Western	50,000
High speed railways	10,000
Total	**5,40,000**

We have increased capital expenditure significantly

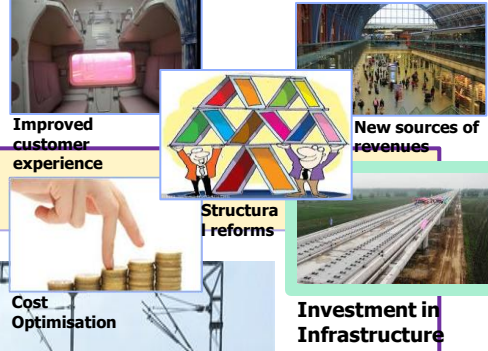




For the first time, assured availability of funds for projects to ensure timely completion

Rs. 1.5 lakh crore funds available from LIC; increased funds through partnerships and PPP; in the process of setting up a fund, with World Bank as anchor lender

Project execution



Substantially increased the average kms Broad Gauge lines commissioned per day

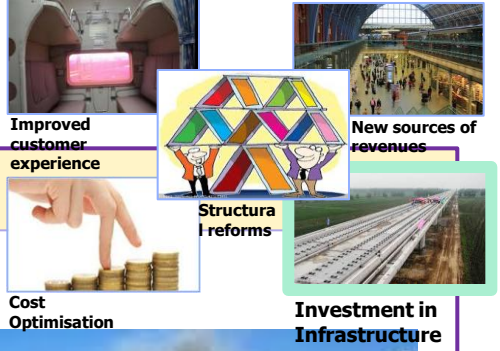
*Increased to about **7 kms/day** from an average of 4.3 kms/day over the last six years; will increase to about **13 kms /day in 2017-18 & 19 kms/day in 2018-19***

Electrification increased substantially

*Increased from 1100 kms per year during 2009-14 to **1600 kms in 2015-16 and 1800 kms in 2016-17***

*More than **10,000 kms** to be electrified during 2015-19*

Project execution (contd.)



Loco factories at Madhepura & Marhowra bid after 7 yrs

Significant part of equity expected through FDI

Order book of Rs. 40,000 crore

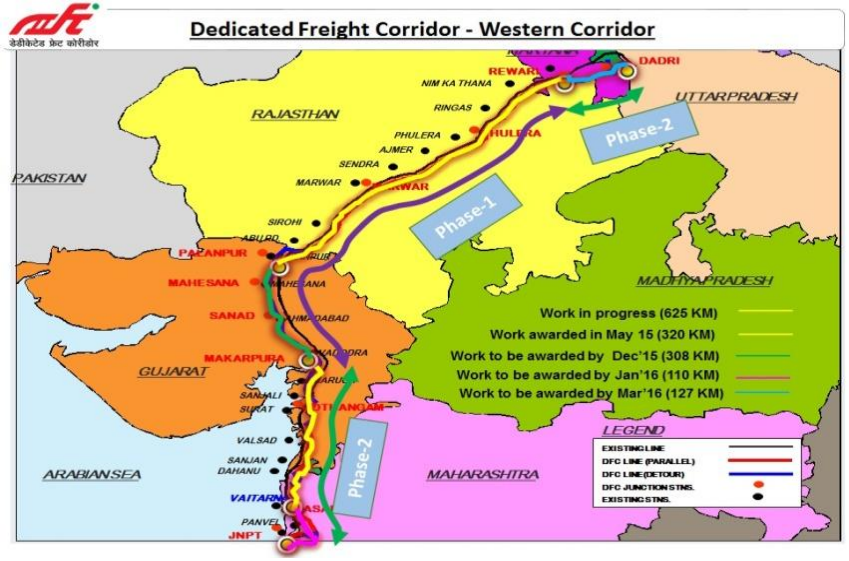
Train sets to be procured through a similar process

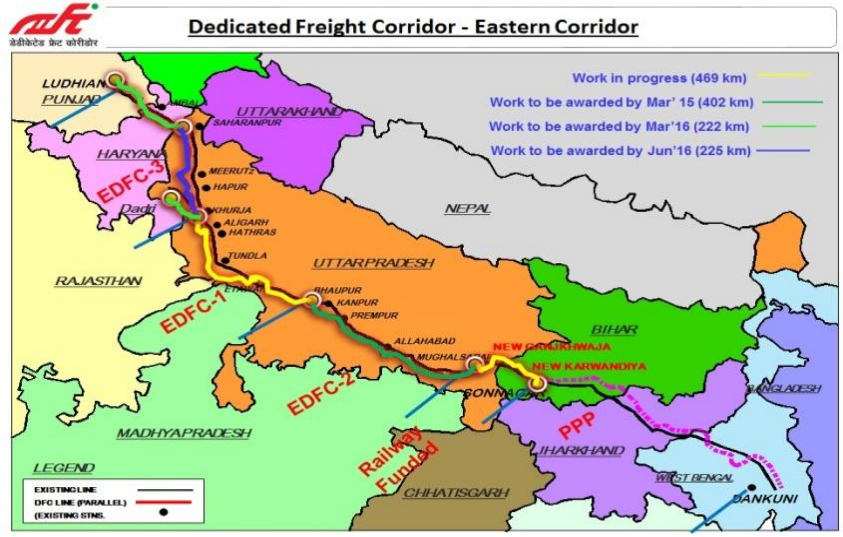
Connectivity to North East, J&K and Naxal-affected areas

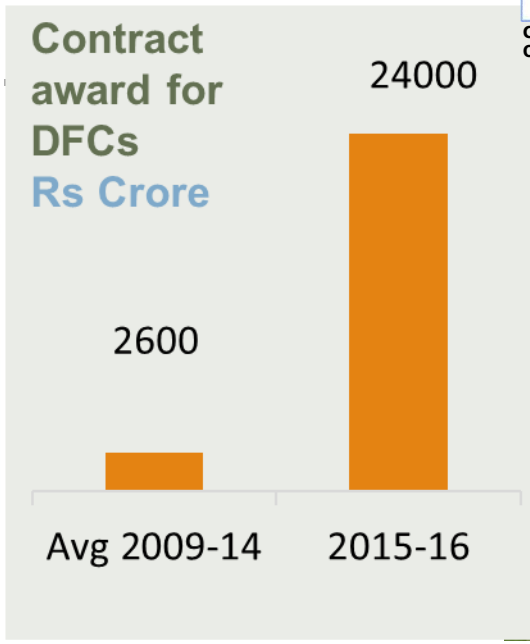
All

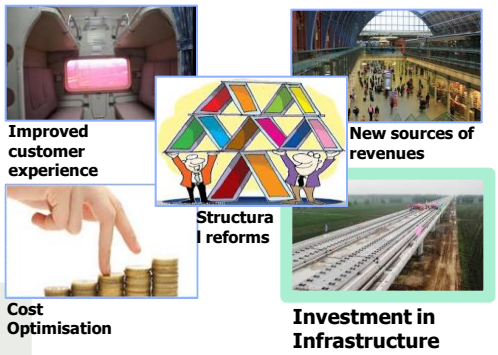
Capital cities in North East to be connected by Broad Gauge by 2020

Dedicated Freight Corridor project has picked momentum



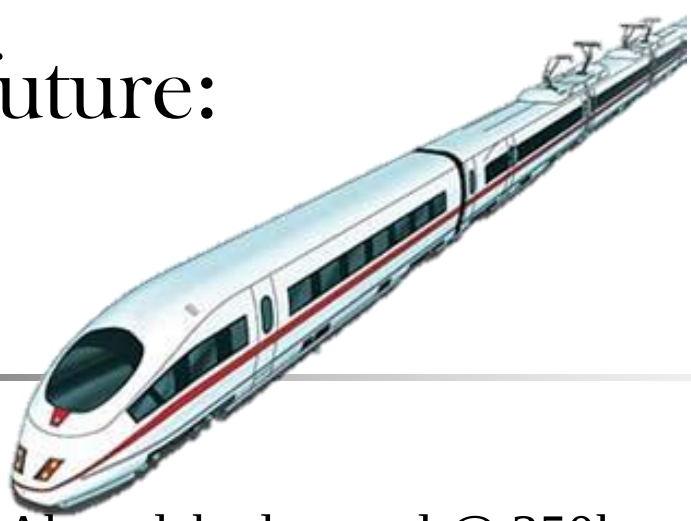


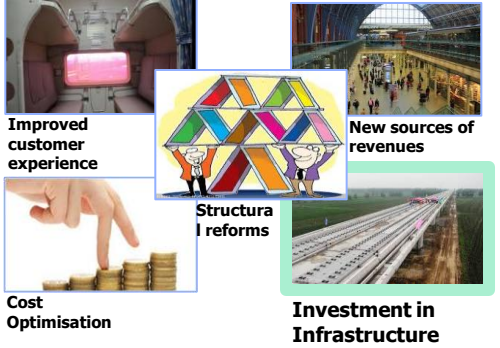




- Majority of contracts will be awarded in next few months
- Target for commissioning – 2019
- Feasibility studies for 3 new DFCs completed – **To be implemented through PPP**

Travel into the future: High Speed Era



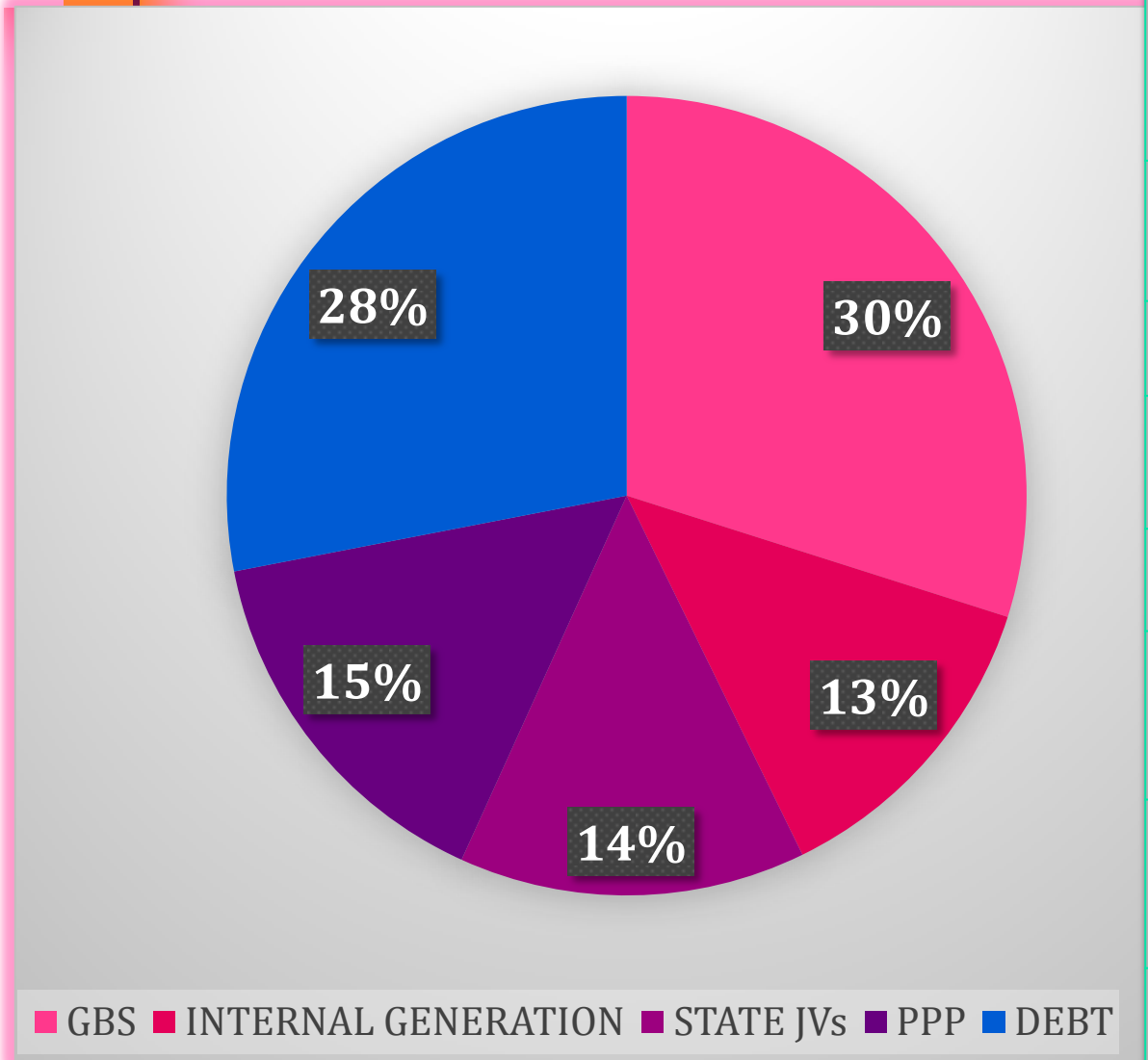


- Bullet train -Mumbai to Ahmedabad; speed @ 350kmph
- Cost: USD 15.4 bn
- Financial & technical partner – Government of Japan
- Construction period 2017-2023
- New SPV registered
- Future studies: Delhi- Nagpur proposed by Govt of China; Mumbai-Kolkata by Govt of Spain, Delhi – Mumbai, Mumbai-Chennai, Delhi-Kolkata
- **Semi – high speed corridors**: Delhi- Agra (implemented), studies: Delhi-Chandigarh (France), Chennai-Bangalore–Mysore (China), Delhi-Mumbai (Korea), Delhi-Kanpur, Nagpur-Bilaspur, Mumbai-Goa, Mumbai-Ahmedabad, Chennai-Hyderabad, Nagpur-Secunderabad

FINANCING PROJECTS

Institutional financing

Five year Fund requirement (tentative)



(Rs. in lakh crore)	
Gross Budgetary Support	2.56
Internal generation	1.00
State JVs	1.20
PPP	1.30
Debt	2.50
Rolling stock lease	*1.00*
Institutional financing	*1.50*
Total	8.56

Sourcing Funds – a snapshot

- Gross Budgetary Support
- Institutional financing: LIC – loan agreement effectuated
- JVs: Projects worth Rs. 1 lakh crore expected to be executed through JVs with State Governments; 17 states committed & 6 signed MOU with IR
- Market debt: Tax free bonds – Rs. 9500 crore in 2015-16
- Multilateral/bilateral agencies – WB, ADB, AIIB
- Implementation of projects through Railway PSUs
- Station Development
- CSR & MPLAD funds for passenger amenities and cleanliness & waste management

Financing the Plan 2016-17

	Rs. in crore
Gross Budgetary Support from Finance Ministry	34220
Safety Fund	10780
Capital fund to meet lease charges	7000
Depreciation Reserve Fund	7160
Development Fund	2515
Bonds by IRFC for Rolling Stock	20000
Extra Budgetary Resources/Institutional Financing (LIC)	20985
Partnerships	18340
Total	**121000**

INSTITUTIONAL FINANCING

Why Institutional financing

- Convert vicious cycle of under-investment to a virtual cycle of revenue generation and higher investment
- Leverage conventional sources of fund to finance projects through institutional debt
- Low cost, long term financing
- Serviced through enhanced revenue generation
- Will be able to access funds through
  - Multilateral development funds, NBFCs, Insurance companies, Infrastructure funds, Sovereign wealth funds, Investment trusts

Implications

- **Assured availability of funds for projects taken up for financing through institutional financing**

- *Funds do not lapse at the end of financial year*

Loan repayment capability – the assumptions

- Prioritised projects essentially doubling projects with a few other projects of electrification, new lines, etc, hence, revenue generating projects
- Large number of ports being expanded & developed
- For meeting the liability of loan repayment, incremental traffic of about 360 MT over & above the normal flow will have to be carried by 2025-26
- The proposed works would have been completed in five years time, hence, higher traffic than the usual flow should materialise to repay the loan

Prerequisites for financing through EBR/IF

- Robust appraisal of projects
- Selection of projects which are clear for drawal of funds; unutilised funds would be a drain on Railway finances
- Realistic assessment of fund requirement
- Timely completion of projects leading to timely generation of revenues for repayment

Intensive monitoring required to avoid slippages

LIC Financing Facility

March 11, 2015 – MOR signed MOU with LIC of India for extending a financing assistance of Rs. 1.5 lakh crore for the next five years; Rs. 2000 crore drawn

- rate of interest : 30bps above the 10-year benchmark yield
- funds would be drawn in tranches, as per requirement
- tenor of the facility would be 30 years
- MOR owned entities can draw funds available under this facility
- LIC will invest in bonds issued by IR companies such as IRFC
- Moratorium:
  - on interest and principal payment for first 5 years; interest to be capitalized
  - year 6 to year 10 interest liability to be met; year 11 to year 30 repayment of principal and interest in equated half yearly instalments, i.e. 40 instalments

Which projects to finance through EBR/IF: Decisions taken in Board meeting on 10.09.2016

- 118 projects listed out under Annex II (excluding 15 projects listed for financing through PPP and State JVs and works under Traffic Facility, Track Renewal, Bridges, S&T and Workshops) and 21 projects identified under Annex III of the EDs report on project prioritisation would qualify for EBR/IF funding subject to:
  - Completion period within 5 years
  - Balance amount for completion to be provided through EBR/IF;

Need for review of Board decision

- Due to reduction in GBS by Rs.8,000 crore, entire doubling (barring a few) and RE projects plus a few others, totalling to Rs.9,584 crore shifted to EBR/IF in RE 2015-16 (incl. projects with ROR below 14%).
- To meet the investment target for 2015-16, fund availability needed to be ensured
- Principles adopted for selecting projects needed to continue in subsequent years
- Land and equity funding through EBR/IF needed to be settled
- Apart from Doubling and Electrification, the criteria for funding other works through EBR/I needed to be settled.

MOF circular on RoR

- *'**13.0** Only those projects with a financial rate of return and an economic internal rate of return both **equal to or exceeding 12%** should be posed to the PIB for its consideration. In those cases where either the financial rate of return or the economic internal rate of return is over 12%, but the other one falls short of the norm, and the administrative ministry still considers it essential that the project should be taken up for implementation, the reasons therefor should be gone into in detail at the pre-PIB meetings and also set out in the memorandum for the PIB. PIB shall consider such cases only in exceptional circumstances and that too only if the projects are in the core sector. Under no circumstances shall projects with both the financial and economic internal rates of return falling below 12% are to be considered by the PIB. In the case of projects, in which institutional financing is contemplated, the appraisal report of the financial institutions should also be submitted along with the PIB proposals so that it is available before the PIB at the time of consideration of the proposal. Project Appraisal and Management Division (PAMD) of Planning Commission shall, in the appraisal, carry out a "Sensitivity Analysis" of the Internal Rate of Return (IRR) for different levels of time and cost overruns.*

The RoR debate

- Prior to August 1990, cut-off/hurdle rate was fixed at 10%
- Revised to 12%
- In 1992 following was considered:
  - Plan size was cut down
  - Increase in costs due to deregulation of steel & procurement of foreign exchange at market rates
  - Works which are *genuinely remunerative* should be included in the Budget
  - Lease rentals on IRFC borrowings may have to be revised upwards
  - MOF pressing for increase in dividend rate
- Cut-off rate was revised to 14%

Proposal by SBICAPS for assessing bankability of projects

Ratio	To be compared with	Criteria for Investment
Project IRR	Weighted Average Cost of Capital (WACC)	Project IRR > WACC
Equity IRR	Hurdle Rate	Equity IRR > Hurdle Rate
Average Debt Service Coverage Ratio (DSCR)	Basic Level (say 1.50)	Average DSCR > Basic Level

Board Decision – March 8, 2016

- Hurdle rate for project sanction fixed at 12% based on MOF circular
- All works of DL & RE be funded from EBR-IF excluding –
  - Works with land, environment issues to be financed out of capital till these issues are resolved.
  - MM in the form of GC & new line works added on to doubling works unless specifically approved by Board
  - Equity investments including Pass Through Assistance (PTA)
  - Cost of land acquisition
  - Charged expenditure
- Committee of ED/PM, EDRE(P), ED/Plg, EDTT/F & EDFX-I to identify eligible works to be subsequently funded through EBR/IF

Board Decision – March 8, 2016 (contd.)

- AMs' Committee (AM/Works, Electrical, Planning & Finance) to monitor physical & financial progress of works funded by EBR-IF:
  - Sign MOUs with GMs, fix physical & financial targets based on BE 2016-17.
  - Draw up action plan for completion of projects by 2019.
  - Slippages to be brought up to Board along with remedial action monthly
  - Report to be put up to Board with suggestions to improve pace of work
- EPC mode of contracting to be adopted for EBR-IF works
- Works under other Plan Heads like TF above hurdle ROR and with leasable assets be considered by AMs Committee.

Board Decision – March 8, 2016 (contd.)

- AMs' Committee (AMs/Finance, Mech, Traffic, Elec & Stores) to consider issues related to financing of rolling stock so that similar principles adopted for financing projects and rolling stock through market borrowings.
- Action Plan for reaching loading target of 1.65 billion tonnes by 2020 and increasing non-fare revenue by a CAGR of 30%
- Action plan for crowding in investment from private sector.

FINANCING PROJECTS

Multilateral/bilateral assistance

Financing DFC

WB & JICA loans for DFC

World Bank

- committed USD 2.725 bn (INR 17,712 cr @ 1 USD = INR 65) loan for Eastern DFC
- 1st loan through MOR Budget to DFC, rest direct to DFCCIL
- loans on back to back terms
- interest @ 40bps above LIBOR, spread varies depending on WB cost of funds; Involves currency fluctuation risk

JICA

- JICA loan JPY 646 billion (incl for procurement of locos)(Rs. 34,880 cr @ 1JPY = INR 0.54)
- Flows through GBS, Interest liability @7% p.a. & moratorium of 10 years; No currency fluctuation risk

Station redevelopment through PPP

- ***Scheme approved by the Union Cabinet***
  - Developing *over 400 stations* to international standards with modern facilities & passenger amenities on lines of PPP airports
  - Land and space-rights of station buildings to be leveraged
  - To seek participation of private entities
  - Over Rs. 1 lakh crore of investment expected in next four years
- Technology collaboration with foreign railways for development of world class terminals

ROLLING STOCK

IRFC Funding

- IRFC borrowing arm of Indian Railways
- Leases assets to MOR
- Borrowing targets provided in the Budget
- Charges a margin of 0.5% over the average borrowing rate in a year
- IRFC owns rolling stock valuing Rs. 1,23,000 crore

Rail India Development Fund (RIDF)

- Fund proposed to set up with World Bank assistance
- Independent of Railway Budget
- Initial Railway & World Bank contributions
- Sovereign wealth funds and pension funds to be tapped
- Independent management
- Projects capable of repaying debt to be financed including PPPs
- Currently feasibility study being undertaken by World Bank

FINANCING INFRASTRUCTURE

Private participation – PPP, FDI, ETC

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.

Rail Connectivity/Capacity Augmentation

Participative Policy 2012 with five different models

- Non Governmental Private line model
- JV model
- BOT through competitive bidding
- Capacity Augmentation through Customer funding
- Capacity Augmentation through – Annuity model

COST SHARING

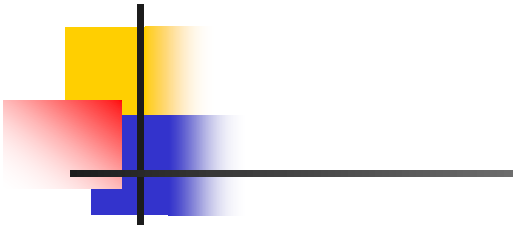
Joint ventures

State JVs

- Proposed with 17 States
- IR to have upto 50% share
- Viable projects to be taken up
- Unviable projects to be provided grant/free land by State Government to make it viable
- projects to be executed through SPVs
- Land to be owned by SPVs
- To be governed through a concession agreement

We are working on…….

- Setting up RIDF
- Setting up a holding company for all Railway PSUs
- Signing MOUs with State Governments
- Station redevelopment through PPP
- High Speed Rail financing through JBIC



Thank you

Introduction of EPC Mode of Contracting in Railways

Achal Khare

Ex. Director / Infra (Civil)

- **EPC stands for Engineering, Procurement, Construction and is a prominent form of contracting agreement in the construction industry.**
- **The engineering and construction contractor will carry out the detailed engineering design of the project, procure all the equipment and materials necessary, and then construct to deliver a functioning facility or asset to their clients.**
- **Companies that deliver EPC Projects are commonly referred to as EPC Contractors.**

NEED FOR EPC CONTRACT

- **Conventional item-rate contracts are generally prone to time & cost overrun due to:**

  - **Involvement of multiple agencies- generally a new line/doubling project involves 15 to 20 different value contracts**
  - **Failure of even one contract delays the project**
  - **Lack of flexibility in replacing failed agency on real time basis**

NEED FOR EPC CONTRACT

- In item-rate contract, allocation of construction risks are largely to Railway , particularly the onus of design which many times lead to:
  - Delays in design and drawings by the Railway
  - Variation in items and quantities
- Considerable time of Project Engineers is consumed in processing of:
  - Variation in quantity of items which are quite frequent
  - Introduction of NS items
  - Variation in contract price
- More susceptible from vigilance point of view

OBJECTIVE OF EPC CONTRACT

- **Implementation of project to specified standards with a fair degree of certainty relating to time & cost while transferring the construction risk to contractor.**
- **Awarding contract for a LS price ensures predictability and financial discipline both for Government & Contractor.**
- **Well defined system of obligation associated with damages both for Railway & Contractor.**
- **Assigning risk to the party who is in a better position to mitigate it e.g. land, statutory clearances assigned to Railway whereas design, site uncertainty, sub contracting are assigned to contractor.**

Perceived Advantage of EPC

- Detailed initial planning before tendering- Railway is required to specify its requirement only, without detailed design.
- Effective project management - less no. of contracts to mange.
- Engagement of professionally managed agencies.
- Minimum variation orders.
- Milestone based payments.

Project scope needs to be specified very carefully and should be exhaustive

SALIENT FEATURES OF MODEL EPC AGREEMENT FOR RAILWAYS

EPC CONTRACT BIDDING PROCESS

Two-stage process of bidding :

- **Request for Qualification (RFQ): To pre-qualify and shortlist eligible bidders (qualification stage) based on specified eligibility criteria.**
- **Request for Proposals (RFP): To invite financial bids from shortlisted bidders. Bidders at this stage engage in a comprehensive scrutiny of the project before submitting their financial offers.**

EPC CONTRACT BIDDING PROCESS

Generally, the Lowest Bidder shall be the Selected Bidder.

- **If two or more Bidders quote the same bid price (the "Tie Bidders"), Bidder is selected by draw of lots, in the presence of the Tie Bidders.**

- **In the event of withdrawal of offer by the Lowest Bidder, the Authority shall annul the Bidding Process and invite fresh bids.**

SALIENT FEATURES OF RFQ

- **Minimum eligibility criteria:**
  - **Technical capacity –**

(i) **Must have received payments for construction of Eligible projects such that the sum total thereof is more than 2.5 times the estimated project cost ("Threshold Technical Capacity") in preceding five years.**

Provided that-

For NL, GC, Doubling/Third line etc works: at least half of the Threshold Technical Capacity shall be from the Eligible Projects in Category 1 and/or Category 3.

For Electrification works: the total Track Kilometre (TKM) of Overhead Equipment (OHE) work from Eligible Projects under Category 1 and/or Category 3 should be at least half of the Estimated Track Kilometre (TKM) of the Project.

SALIENT FEATURES OF RFQ

- **Minimum eligibility criteria:**

  - **Technical capacity (contd.) –**

(ii) (a) For NL, GC, Doubling/Third line etc works :

undertaken at least one Eligible Project of value of not less than 35% of the Estimated Project Cost and have received payments for not less than 75% value of such project.

(b) For Railway Electrification works:

undertaken at least one Eligible Project under Category 1 or Category 3, either of value of not less than 35% of the Estimated Project Cost OR of total TKM of overhead equipment (OHE) of not less than 35% of the Estimated TKM of the Project, and OHE portion of the Eligible Project has been commissioned. (Provisional Acceptance Certificate of the OHE portion of Eligible Project has been issued).

SALIENT FEATURES OF RFQ

Minimum eligibility criteria:

Financial capacity – The Applicant shall have a minimum Net worth equal to Rupees * crore at the close of preceding financial year.**

- **This amount should be about 10% (ten percent) of the Estimated Project Cost of the project for which bids are being invited.**
- **Net worth has been adopted as the criterion for assessing financial capacity since it is a comprehensive indication of the financial strength of the Applicant.**

EVALUATION CRITERIA

- **Only those Applicants who meet eligibility criteria will be evaluated**
- **Eligible projects:**
  - **Category-1: PPP project in railway sector with capital cost of project more than 30% of the estimated project cost.**
  - **Category-2: Same as above but in core sector.**
  - **Category-3: Construction project on railway sector executed fully or partially during preceding five years and received payment not less than 15% of the estimated project cost.**
  - **Category-4: Same as above but in core sector.**

EVALUATION CRITERIA

For NL, GC, Douling/Third line etc works -

- **Railways sector would be deemed to include railways, metro rails, LRT, monorail, high speed rail, highways, expressways, bridges (road/railways) and tunnels (road/railways); and**
- **Core sector would be deemed to include hydroelectric dams, barrage, ports, airports, thermal/steel/cement plants, oil and gas pipelines, irrigation canals, water supply (pipelines/treatment plants), sewerage (pipelines/treatment plants), power transmission lines and real estate development**

EVALUATION CRITERIA

For Railway Electrification works –

- **Railways sector would be deemed to include overhead equipment system of railway electrification for a railway system, metro system, suburban transit system, and high speed railways; and**
- **Core sector would be deemed to include Railways, power and telecom sectors or any other construction works.**

EVALUATION CRITERIA (RFQ)

For assigning scores to the Applicant, experience is measured in terms of **Experience score**

- **Experience score** for an eligible project in a given category will be eligible receipts in that project divided by 1(one) crore and then multiplied by the applicable factor:

Category	Factor
Category 1	0.75
Category 2	0.50
Category 3	1
Category 4	0.75

SHORTLISTING OF APPLICANTS

- **Aggregate experience score** will be sum total for all eligible projects of an Applicant
- Applicants to be ranked based on their **aggregate experience scores**
- Authority would **shortlist upto 6 (six) pre-qualified Applicants** for participation in the bid stage

AUTHORITY'S OBLIGATIONS

- Provide Right of Way for construction not less than 90% of project length within 15 days of signing agreement.
- All environmental and forest clearance within 15 days.
- GAD approval of ROBs/RUBs from Road authority within 60 days.
- Shifting of utilities within 180 days of notice given by contractor.
- Provide Traffic & Power block as specified in agreement.

CONTRACTOR'S OBLIGATIONS

- Provide Performance Security equal to 5% of contract price (CP) within 15 days of signing of agreement.
- To undertake construction and complete the project on or before schedule completion date.

Damages associated with obligations of MoR

Amount of damage for not providing ROW will be (Rs./day/m)

$$= 0.10 \times C \times 1/L \times 1/N$$

C=Contract Price (RS.), L=Length of Project (m),

N=Completion Period (days)

- **For 100 km. project with completion period of 1000 days & CP Rs.600 crore, damage works out to Rs.6000/day/km.**
- **In case of ROB/RUB GAD approval, each such ROB will be treated as 1 km. of ROW for the purpose of damages.**
- **For Power/Traffic block, damage rate would be Rs.1000/day for each hour of block not provided.**
- **Aggregate damages payable as above shall not exceed 2.5% of the contract price.**

Damages associated with obligation of contractor

- **Delay in Performance Security – Damages @ 0.05% of CP/day.**
- **Delay in project completion – Damages @ 0.05% of CP/day subject to a maximum of 10% of CP.**

CONTRACT PRICE

- L.S. Price for defined scope of work .
- Interim payment on completion of a stage, in length, number or area as specified in Schedule e.g. Bridge payment is planned in 03 stages i.e. Foundation, Sub-Structure & Super-Structure. On pro rata basis w.r.t. total linear length.
- Interim payment schedule include electrification and S&T works also.
- Price adjustment as per specified PV formulae with 15% fixed component.
- Retention Money: @6% of interim payment, total not exceeding 5% of CP, to be refunded within 15 days of issue of completion certificate.

CHANGE OF SCOPE

- **Change of scope - Omission or addition of any work from the scope of the project and also change in specification.**
- **The cost of change of scope determined based on works of similar nature or else to be derived on the basis of applicable SOR of relevant zonal railway .**
- **Total value of change of scope not to exceed 10% of contract price.**
- **In case of no mutual agreement on change of scope, Authority may award the additional work to other contractor. However, if the main contractor bid is within 10% of the first lowest, he will have the option of matching the first bid and execute the work after paying the 2% of the bid amount to Authority.**

Design & other documents by contractor

- Contractor to provide, general methods for design & construction, plan, traffic management and safety plan.
- Programme for completion for all stages of construction.
- Quality Assurance Plan :
  i. Quality control mechanism, Method Statements including sampling, testing, test frequency, standards, acceptance criteria, check-list for site activities, proforma for testing & calibration.
  ii. Internal quality audit system.
- Contractor to appoint proof consultant with the consent of Railway.

MONITORING & SUPERVISION

- Railway to nominate an Engineer to keep day-to-day interaction between Railway and the contractor - Authority's Engineer
- Review of all designs and other documents w.r.t. their conformity to standards & specifications, scope of work by Authority's Engineer.
- Monthly progress reports.
- Quality control records and document before issue of completion certificate.
- Video recording of construction for every calendar quarter.

Railway Approvals

- Contractor to submit ESP within 02 months of Appointed Date and Railway to approve in next 04 months.
- Contractor to submit SIP & RCC within 02 months of approval of ESP and Railway to approve in next 04 months.
- Delay in submission by contractor or approval by Railway for ESP, SIP & RCC will attract damage equal to 0.2% of performance security for each day of delay.
- NI program will be drawn by Railway and jointly signed and done under the direct supervision of Railway.
- Generally, Railway to review the drawings within 30 days.
- For drawings, involving review by multiple railway agencies, i.e., Open Line, RDSO etc., overall review within 45 days out of which Open Line/RDSO to give their review within 30 days.
- Schematic yard plans to be signed jointly by CE/Con and CTPM, which needs to be done before invitation of tender.

Completion Certificate & CRS Sanction

- At least 30 days prior to likely completion, contractor shall prepare and submit to Railway's Engineer documents required for seeking approval of CRS.
- Railway's Engineer shall check the project with specifications & standards and upon satisfaction issue a Provisional certificate that Project can be safely and reliably placed in service.
- Contractor shall assist Railway during inspection by CRS.

DEFECT LIABILITY

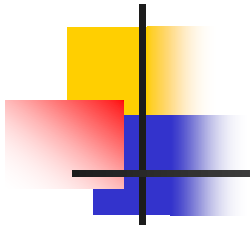
- The defect liability period is two years commencing from date of issue of Provisional certificate.
- For important bridges, other specified structures, S&T equipments comprising new technology, there shall be extended DLP of two years.
- The contractor to rectify the defect within 15 days or such reasonable period as determined by Railway's Engineer.
- In case of failure of contractor to rectify the defect, Railway can do so and recover additional 20% as damages.
- Any materials or works with defects replaced/repaired during DLP would be further warranted for 12 months.

TERMINATION

- Various defaults of contractor stated in the agreement, which if not cured within 60 days of occurrence, the contract can be terminated on contractor's default .
- Upon termination on contractor's default, Railway shall -
  - encash Performance Security or Retention Money whichever is more.
  - encash B.G. for outstanding advance and interest.
  - pay to the contractor for an unpaid work

BONUS FOR EARLY COMPLETION

- In the event project completion date occurs prior to the scheduled completion date, the contractor shall be paid bonus equivalent to 0.03% of the contract price for each day by which the project completion date precedes.
- The maximum bonus shall be limited to 3% of the contract price.



THANK YOU

Traffic Costing Increasing Stress on Cost of Operations

A
presentation by
Executive Director/Statistics & Economics/Railway Board
NAIR,Vadodara, 17th May 2016

Scheme of Presentation

Summary of End Result-2014-15

MG Freight operations

Profitability of AC 3 tier coaches

Manpower Productivity –Benchmarking

Energy consumption statistics

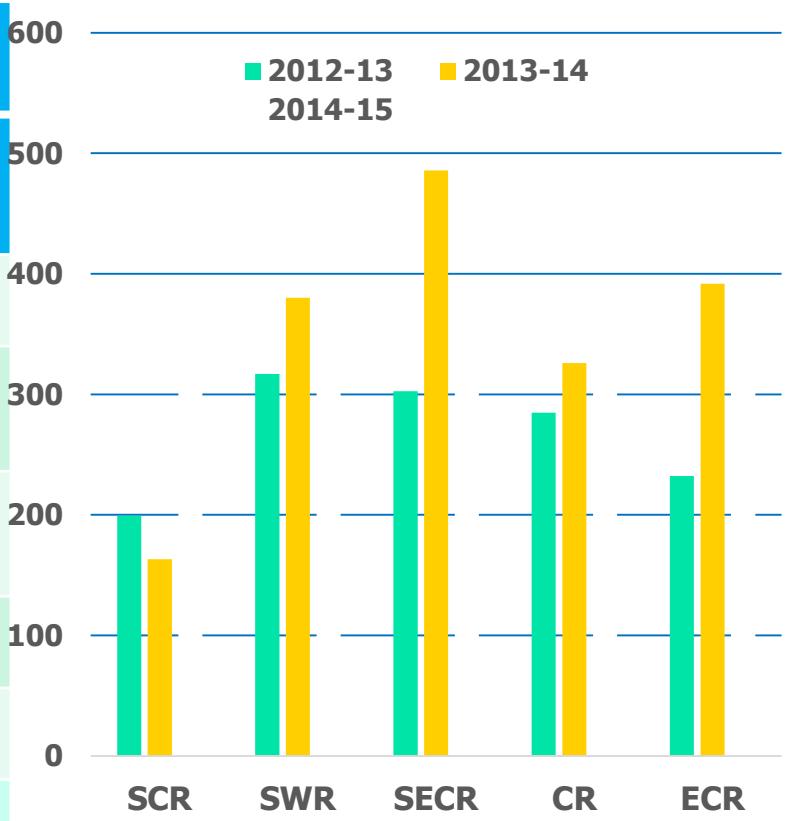
Summary of End Result – 2014-15

- End result of process of Traffic Costing. Begins after closure of Finance Accounts – Capital and Revenue
- Percentage of expenses for various activities
  - Line Haul Expenses – Traction Costs (31%)| Track (12.60 %)and Signalling (1.55%)costs | Other Transportation(8.75%) Costs
  - Provisions and Maintenance of Goods Stock(9.31%)
  - Terminal Functions(9.15%)
  - Overheads(27.45%)

Line Haul Cost – Diesel Traction

- Constitutes 15.68% of total freight expenditure

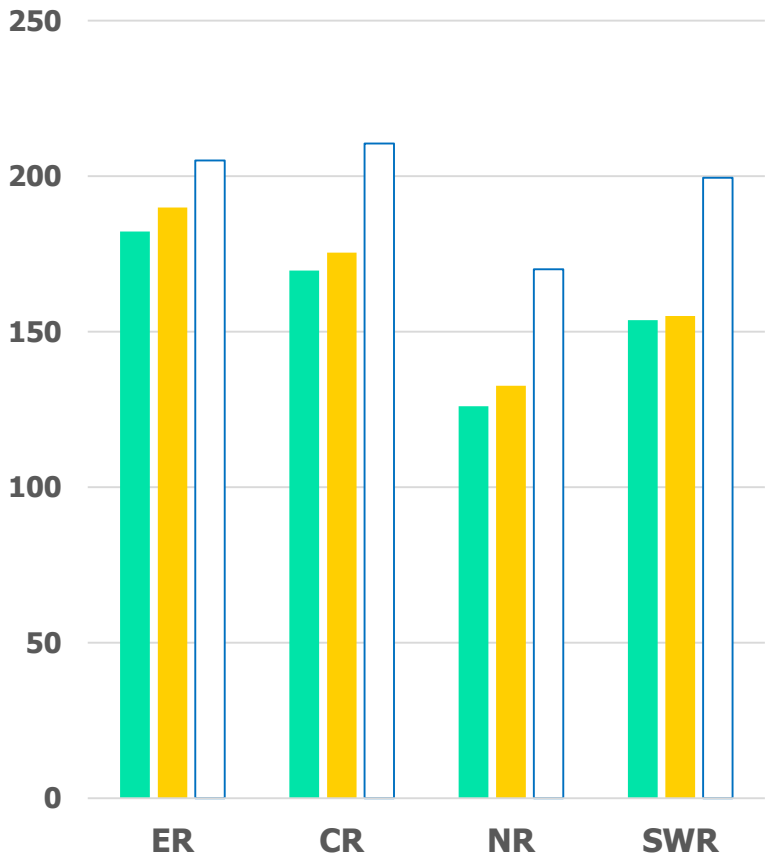
Rly	Cost/1000 GTKM (Rs) – Diesel Traction				
	2012-13	2013-14	(% ↑/↓) over PY	2014-15	(% ↑/↓) over PY
SCR	213.70	163.20	-18.2%	396.11	**25%**
SWR	317.04	380.25	**19.9%**	381.68	**0.4%**
SECR	302.60	485.80	**60.5%**	369.26	-24%
CR	284.82	326.03	14.5%	301.71	-7.5%
ECR	232.16	391.87	**68.8%**	307.58	-21.5%
All IR	**201.40**	**278.20**	**38.1%**	**265.09**	**-4.7%**



Line Haul Cost –Electric Traction

- Constitutes 15.30% of total freight expenditure

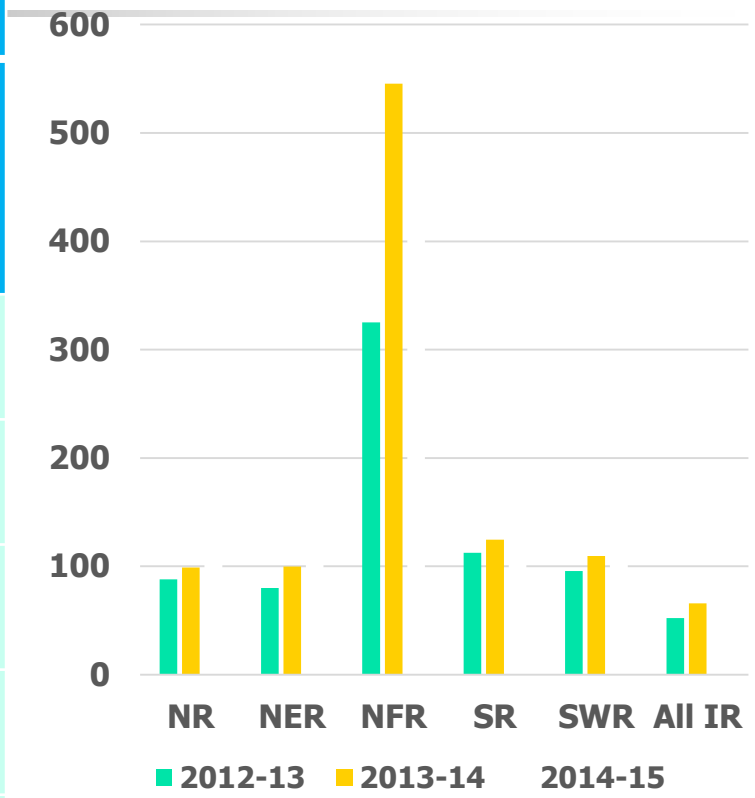
Rly	Cost/1000 GTKM (Rs) – Electric Traction				
ER	182.26	189.92	**4.2%**	205.07	**8.0%**
CR	169.68	175.44	3.4%	210.52	**20.0 %**
NR	126.1	132.59	5.1%	170.12	**28.3 %**
SWR	153.72	155.03	0.9%	199.51	**28.7 %**
All IR	**110.8**	**131.2**	**18.4 %**	**139.65**	**6.4%**



Line Haul Cost – Cost of Track

- Constitutes 12.60% of total freight expenditure

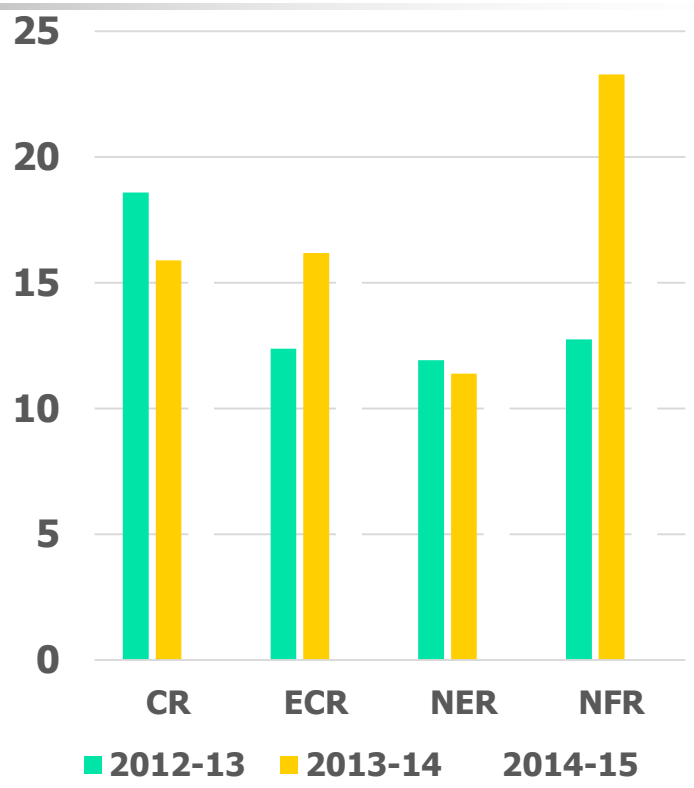
	2012-13	2013-14	2014-15
Rly	Cost/ 1000 GTKM (Rs)	Cost/ 1000 GTKM (Rs) (% ↑ or ↓)	Cost/ 1000 GTKM (Rs) (% ↑ or ↓)
NR	88	**98.93** (12%)	**125.51 (27%)**
NER	79.83	**99.89** (25%)	**123.85 (24%)**
NFR	325.15	**545.58 (68%)**	**454.11** (-17%)
SR	112.40	**124.66** (11%)	**126.88** (2%)
SWR	95.70	**109.45** (14%)	**116.32** (6%)
All IR	**52.16**	**65.72 (26%)**	**74.69 (14%)**



Line Haul Cost –Cost of Signalling

- Constitutes 1.55% of total freight expenditure

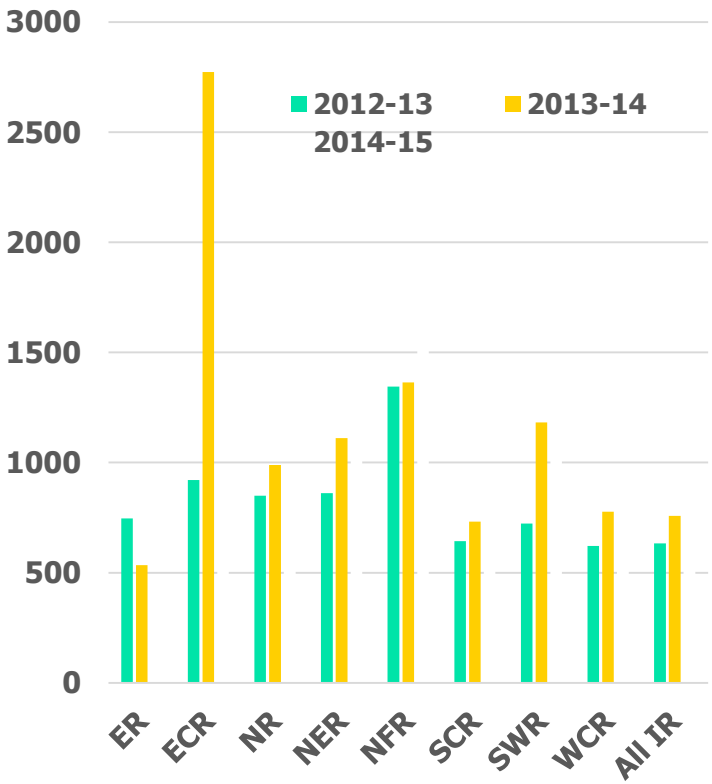
	2012-13	2013-14	2014-15
Rly	Cost/ 1000 GTKM (Rs)	Cost/1000 GTKM (Rs) (% ↑ or ↓)	
CR	**18.58**	15.88 (-15%)	**17.81 (12%)**
ECR	**12.38**	**16.18 (31%)**	**16.26** (0.49%)
NER	**11.92**	11.38 (-5%)	**14.95 (31%)**
NFR	**12.75**	**23.28 (83%)**	**17.87** (-23%)
All IR	**7.41**	**8.67 (17%)**	**9.18 (6%)**



Cost of Provision & Maintenance of Wagons

- Constitutes 9.31% of total freight expenditure

Rly	2012-13	2013-14	(% ↑/↓)	2014-15	(% ↑/↓)
	Cost /Wagon Day (₹)				
ER	746.85	534.83	-28.4%	238.53	-55.4%
ECR	920.98	2772.62	201.1%#	846.93	-69.5%
NR	850.07	988.36	16.3%	981.74	-0.7%
NER	861.71	1111.37	29.0%	1053.15	-5.2%
NFR	1345.61	1363.32	1.3%	1522.62	11.7%
SCR	642.98	731.38	13.7%	772.88	5.7%
SWR	723	1182.41	63.5%	1478.36	25.0%
WCR	621.55	777.25	25.1%	855.47	10.1%
All IR	632.90	758.67	19.9%	758.41	0.0%

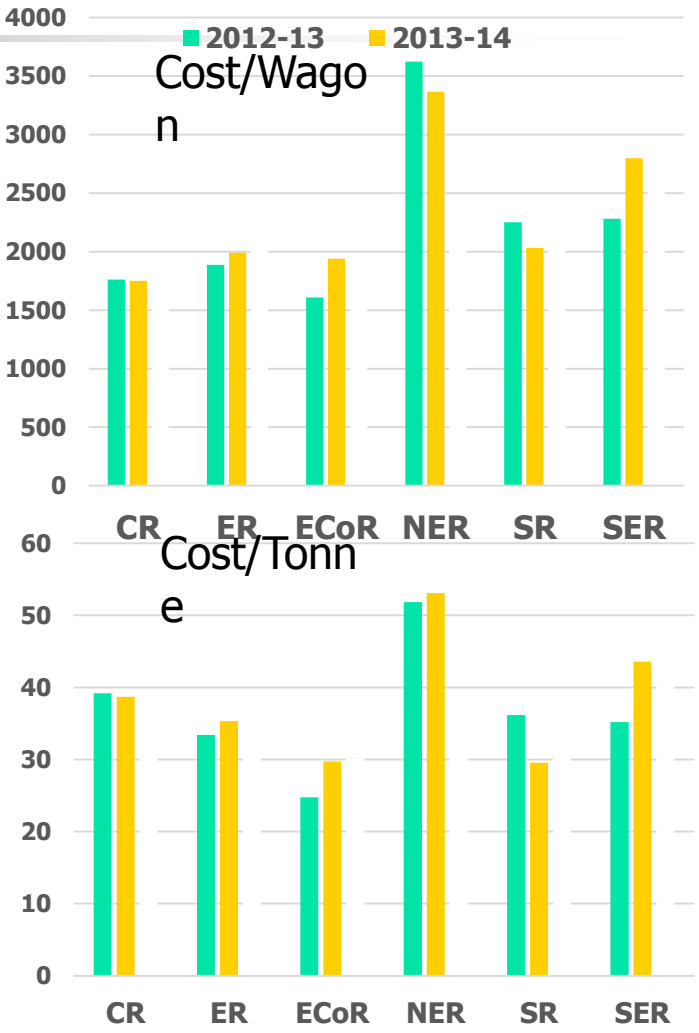


Letter written to ECR for Checking of Data (Letter No. 2016/Stat.(CA)/Chg./1 dated 05-04-2016)

Cost of Other Terminal Service

- Constitutes 9.12% of total freight expenditure

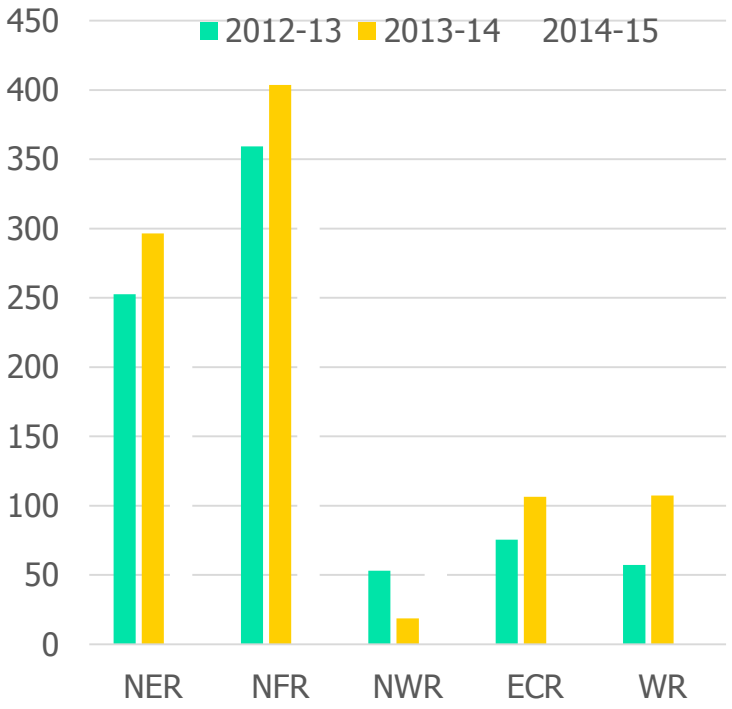
Rly	Cost /Wagon (Rs)			Cost / Tonne (Rs)		
	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15
CR	1762.25	1749.39 (-0.7%)	**1973.24 (12.8%)**	39.20	38.70 (-1.3%)	38.48 (-0.6%)
ER	1886.08	**1990.81** (5.5%)	**2179.04** (9.5%)	33.41	**35.34** (5.8%)	**38.29 (8.3%)**
ECoR	1607.85	**1939.25 (20.6%)**	**1958.04** (1%)	24.75	**29.73 (20.1%)**	**30.13** (1.3%)
NER	3622.13	3364.79 (-7.1%)	2321.30 (-31%)	51.82	**53.06** (2.4%)	36.38 (-31.48%)
		2031.5				



MG Freight Expenses

Rs in Cr

Railway	2012-13	2013-14	2014-15
North Eastern Railway	252.59	296.45	**244.25**
North Frontier Railway	359.22	403.67	**342.41**
North Western Railway	53.12	18.76	**58.76**
East Central Railway	75.61	106.33	**0**
South Central Railway	0	-0.2	**0**
Western Railway	57.22	107.43	**0**
Total for MG	**797.80**	**932.46**	**645.42**



MG Freight Performance

Parameters	NER	NFR	NWR	IR (MG)
Route Kms	**1023**	601	988	4907
No. of wagons	716	**863**	0	**3139**
Average no. of diesel locomotives in use daily	**1**	**30**	**1**	**39**
Tonnes Originating - Revenue (in millions)	0.14	1.47	0.00	1.60
Fuel (HSD oil) consumed per 1000 GTKMs	**5.73**	**8.24**	**0.00**	**6.62**
Cost of maintenance of wagons (Rs in Cr.)	**3.71**	**8.69**	**0.37**	**13.82**
Cost of MG Workshops (Rs in Cr.)	**10.53**	0.78	0.00	**11.31**
Cost of operations (Rs in Cr.)	**244.25**	**342.42**	**58.76**	**645.43**
Freight earnings (Rs in Cr.)	**3.20**	**67.58**	**0.002**	**70.78**

Coaching Unit Cost

Overall Passenger Services Cost (Terminal and Line Haul)2014-15

Railways	Cost per Passenger Carried (Rs)	Cost per PKM (Rs)
NFR	336.29	2.17
ER	193.13	1.45
SER	168.48	0.78
ECoR	166.17	0.84
NWR	158.99	0.98
SR	137.03	0.90
NR	132.61	0.87
All IR	128.07	0.68

AC – 3 Tier Profitability – Loss Making Rlys

- Profit by IR on AC 3 tier Coaches - Rs 881.52 cr
- Losses suffered in 7 zones in 2014-15 - ECoR, ER, NFR, NR, NER, SWR, SR

Rs in Lacs

Rlys	Years	Expenses	Approx. Earnings	Profit/Loss (+/-)
ECoR	2012-13	17696	18701	**1005**
	2013-14	22591	**21911**	**-680**
	2014-15	30709	**27240**	**-3469**
ER	2012-13	33766	**15078**	**-18688**
	2013-14	37482	**15892**	**-21590**
	2014-15	47438	**17487**	**-29951**
NFR	2012-13	27333	**20144**	**-7189**
	2013-14	34185	**28429**	**-5756**
	2014-15	37193	**35714**	**-1479**
NER	2012-13	11577	**2413**	**-9164**
	2013-14	13545	**2744**	**-10801**
	2014-15	15635	**4277**	**-11358**
IR	**2012-13**	**481085**	**530584**	**49499**
	2013-14	**600247**	**641314**	**41067**
	2014-15	**701154**	**789306**	**88152**

AC – 3 Tier Profitability – Loss Making Rlys

- Profit by IR on AC 3 tier Coaches –Rs 881.52 cr
- Losses suffered in 7 zones in 2014-15 - ECoR, ER, NFR, NR, NER, SWR, SR

Rs in Lacs

Rlys	Years	Expenses	Approx. Earnings	Profit/Loss (+/-)
NR	2012-13	83659	82276	-1383
	2013-14	124699	93164	-31535
	2014-15	144381	117684	-26697
SWR	2012-13	16491	14594	-1897
	2013-14	22143	17682	-4461
	2014-15	24748	20347	-4401
SR	2012-13	52262	45012	-7250
	2013-14	63751	54699	-9052
	2014-15	75795	65432	-10363
IR	**2012-13**	**481085**	**530584**	49499
	2013-14	**600247**	**641314**	41067
	2014-15	**701154**	**789306**	88152

AC – 3 Tier Profitability – Loss Making Rlys
Cost on maintenance, Average Lead and Average Occupancy

Rlys	Years	Cost of Prov. & Main.		Avg. lead		Pass. / Coach	
		Rs Lakhs	%↑/↓	KMs	%↑/↓	Units	%↑/↓
ECoR	2012-13	3554		447		64	
	2013-14	4107	16%	457	2.3%	59	-8.1%
	2014-15	**5314**	**29%**	492	7.7%	51	-14.4%
ER	2012-13	9351		320		58	
	2013-14	9629	3%	323	1.0%	57	-1.8%
	2014-15	**12689**	**32%**	319	-1.2%	43	-25.4%
NFR	2012-13	4963		223		63	
	2013-14	4739	-5%	288	28.7%	80	27.2%
	2014-15	**5124**	**8%**	216	-24.8%	69	-13.4%
NER	2012-13	2018		149		18	
	2013-14	2211	10%	150	0.4%	16	-6.4%
	2014-15	**2639**	**19%**	151	0.9%	21	29.4%

AC – 3 Tier Profitability – Loss Making Rlys
Cost on maintenance, Average Lead and Average Occupancy

Rlys	Years	Cost of Prov. & Main.		Avg. lead		Pass. /Coach	
		Rs Lakhs	%↑/↓	KMs	%↑/↓	Units	%↑/↓
NR	2012-13	34546		236		70	
	2013-14	57246	66%	231	-1.8%	56	-20.0%
	2014-15	**68249**	**19%**	240	3.6%	57	1.0%
SWR	2012-13	3121		240		53	
	2013-14	2916	-7%	246	2.4%	45	-15.8%
	2014-15	**3964**	**36%**	247	0.5%	45	0.7%
SR	2012-13	10190		429		58	
	2013-14	11061	9%	428	-0.1%	57	-2.4%
	2014-15	**14427**	**30%**	389	-9.0%	56	-1.7%

Manpower Productivity- Benchmarking

Parameters	IR	Best	Exceeding IR average
ALP/LP per loco	9.20	SR – 4.58	NER,NWR,NR,ECOR,NCR,SECR(18.39),ECR
MPR of diesel loco shed / loco (holding >80)	4.97	PTRU (ECR) - 3.82	PA, FZR ,TKD (6.73),LKO,ABR,ED,GOC,GTL,KGP,RTM,NKJ,ET
MPR of electric loco shed / loco	3.63	LGD (SER)- 2.8	KYN,BSL,ASN,HWH,MGS,ALD,AJJ(4.79),SRC,TATA,BRC,BPL,KTT
MPR of coaching depot Mechanical /coach (holding >300 coaches)	0.96	NCJ(SR) – 0.39	TKPR,SYAE,NCC,KOAA,RNCC,DNR,NDLS,NZM,DLI,DEE,ANVT,FZR,LKO(2.53),MB,UMB,ALD,KIR,BBQ,MS,SRC,HATIA,ADI,JBP

Manpower Productivity- Benchmarking

Parameters	IR	Best	Exceeding IR average
MPR of coaching depot Electrical /coach(holding >300 coaches)	0.46	KLK (NR) – 0.12	BBS,VSKP,DLI,BSB(1.77),JHS,KIR,DBRG,AII,JP,MAS,TPJ,SA,TVC,SRC,HATIA,DURG,UBL,SBC
MPR of Telecom staff per /000 DETUs for > 120 DISTUs	1.31	SC (SCR)-0.41	BB,BSL,NGP,SUR,SDAH,DHN,MGS(2.41),WAT,FZR,LKO,MB,APDJ,KGP,ADA,BCT,BRC,RTM,ADI,BPL,KTT
MPR of Signalling staff per/000 DESUs for >120 DISTUs	3.24	AGC (NCR) -0.81	BSL,NGP,SUR,SDAH,ASN,MGS,SEE,WAT,DLI,FZR,LKO,MN,KIR,APDJ(6.15),RNY,LMG,TSK,JP,RTM,ADI,JBP

Manpower Productivity- Benchmarking

Parameters	IR	Best	Exceeding IR average
MPR of Elec. power /000 units (div. consuming > 2300000)	0.15	FZR (NR) – 0.01	BB,BSL,HWH,SDAH,ASN,DNR(0.30),WAT,DLI,KIR,MAS,SC,ADA,BRC,BPL,JBP
MPR of TRD staff / TKM (non-suburban)	0.38	SUR (CR) – 0.13	PA(0.91),DNR,WAT,FZR,MB,ALD,PGT,MDU,KGP,NGP,SBC,JBP
MPR of Wagon ROH depot	0.91	BNDM(SER)-0.39	TKD,UMB,GTL,VTA,NKJ(2.16)

Manpower Productivity- Benchmarking

Parameters	IR	Best	Exceeding IR average
MPR of IOW staff(Bridges)/ITKM >500 ITKMs	0.09	SBC (SWR) – 0.01	BSL,HWH,SDAH,MGS,DNR,DHN,SEE,DLI,FZR,LKO,UMB,ALD,LJN,KIR(1.79),MAS,SC,CKP,NGP,JBP,BPL,KTT
MPR of Building staff / ITKMs > 750 ITKMs	0.24	RNC(SER) – 0.06	BB,BSL,MGS,DHN,DNR,SEE,KUR,UMB,IZN,BKN,JP,MAS,TPJ(0.60),GTL,HYB,UBL,SBC,BCT,ADI,JBL,BPL
MPR of P Way staff / ETKM (divisions > 2250 ETKMs)	1.3	BRC(WR) – 0.48	BB,KUR,HQ/NFR(0.29),PGT,SC,BZA,GTL,BPL

EMU suburban services

Energy Consumption (KWH) per 1000 GTKMs

Railway	2012-13	2013-14	2014-15
CR	34.5	34.33	34.13
ER	42.77	41.45	41.19
NR	40	40	40
SR	45.29	45.23	45.49
SCR		40	40
SER	40	40	40
WR	22.4	26.16	32
Metro Kolkata	75.28	76.11	74.26
IR	36.03	26.64	28.03

MEMU Non-suburban services
Energy Consumption (KWH) per 1000 GTKMs

Railway	2012-13	2013-14	2014-15
CR	32	32	32
ER	36.95	40.19	36.98
ECR	40	40	40
ECOR	40	40	40
NR	40	40	40
SR	8.43	9.38	9.93
SCR	40	40	40
SER	40	40	40
SECR	40	40	40
WR	40	40	40
IR	36.23	37.20	36.70

Fuel/Energy Consumption - Diesel

Fuel Energy Consumption of Zonal Railways per 1000 GTKMS

Years		CR	ER	ECR	ECoR	NR	NCR	NER	NFR	IR
Passenger (Diesel – Litres)										
2012-13	RED > IR	4.05	3.86	3.59	4.29	3.48	3.98	3.85	4.17	3.8
2013-14		4	3.83	3.41	3.96	3.47	4.01	3.84	4.05	3.72
2014-15		4.12	3.88	3.21	3.85	3.45	3.95	3.83	4.49	3.78
Target 2015-16		3.93	3.74	3.61	3.88	3.43	3.91	3.48	4.09	-
Upto Jan' 16	RED > Target	3.94	3.84	3.55	3.97	3.43	3.96	3.77	4.05	-
Goods(Diesel – Litres)										
2012-13	RED > IR	2.77	2.4	2.02	2	1.87	2	2.05	1.94	2.23
2013-14		2.54	2.32	2.32	1.86	1.86	2	2.04	1.98	2.23
2014-15		2.59	2.24	1.97	1.82	1.85	1.97	2.03	1.68	2.1
Target 2015-16		2.33	2.02	1.9	1.93	1.84	1.98	1.95	1.79	-
Upto Jan' 16	RED > Target	2.35	1.97	1.91	1.88	1.83	1.97	2	1.71	-

Fuel/Energy Consumption – Diesel

- Fuel Energy Consumption of Zonal Railways per 1000 GTKMS

Years		NWR	SR	SCR	SER	SECR	SWR	WR	WCR	IR
Passenger (Diesel – Litres)										
2012-13	Red > IR	3.99	4.04	3.89	3.2	4.14	4.01	3.2	3.83	3.8
2013-14		3.99	4.1	3.88	3.16	4.04	3.93	3.22	3.17	3.72
2014-15		4.01	4.19	4.49	3.15	3.53	3.93	3.25	3.1	3.78
Target 2015-16		3.93	3.93	3.27	3.17	3.55	3.88	3.21	3.59	-
Upto Jan' 16	Red > Target	NA	4.01	3.01	3.22	3.45	3.87	3.62	3.46	-
Goods (Diesel - Litres)										
2012-13	Red > IR	1.99	2.22	2.9	1.93	2.07	2.74	2.09	2.26	2.23
2013-14		1.99	2.11	2.89	1.92	1.85	2.76	2.16	2.44	2.23
2014-15		2.01	2.18	2.24	1.9	1.88	2.75	2.1	2.45	2.1
Target 2015-16		1.97	2.03	1.85	1.9	1.81	2.71	1.97	1.89	-
Upto Jan' 16	Red > Target	-	2.03	1.68	1.89	1.78	2.72	2.03	1.85	-

Fuel/Energy Consumption - Electric

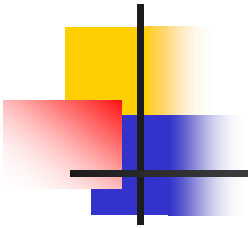
Fuel Energy Consumption of Zonal Railways per 1000 GTKMS

Years		CR	ER	ECR	ECoR	NR	NCR	SR	IR
Passenger (Electric- KWH)									
2012-13	**RED > IR**	**7.83**	**6.54**	**9.44**	**6.42**	5.01	3.9	**7.48**	**6.13**
2013-14		**7.51**	**6.31**	**10.3**	**6.92**	4.97	3.57	**7.64**	**6.08**
2014-15		**7.94**	6.39	**10.4**	**6.99**	4.95	5.38	6.67	**6.86**
Target 2015-16		7.47	6.28	9.71	6.58	4.95	3.55	7.44	
Upto Jan' 16	**RED > Target**	6.29	**7.28**	**10.52**	6.22	4.94	**5.59**	6.65	
Goods(Electric- KWH)									
2012-13	**RED > IR**	18.8	16	**20**	**26.5**	18.6	18.5	18.7	**18.9**
2013-14		18.7	16	**20**	**26.5**	18.6	18.5	18.7	**18.8**
2014-15		18.5	16.1	**20**	**25.3**	18.5	18.5	**19.1**	**18.9**
Target 2015-16		18.61	15.82	19.9	25.16	18.51	18.41	18.61	
Upto Jan' 16	**RED > Target**	18.32	11.97	19.55	19.63	18.49	**18.56**	18.47	

Fuel/Energy Consumption – Electric

Fuel Energy Consumption of Zonal Railways per 1000 GTKMS

Years		SCR	SER	SECR	SWR	WR	WCR	IR
Passenger (Electric- KWH)								
2012-13	RED > IR	5.11	**6.32**	6.06	**10.9**	**6.24**	**7.07**	**6.13**
2013-14		5.32	**6.28**	5.53	**10.7**	5.8	**7.82**	**6.08**
2014-15		6.1	6.46	6	**10.6**	6.48	**8.04**	**6.86**
Target 2015-16		5.11	6.25	5.5	10.65	5.77	6.61	
Upto Jan' 16	RED > Target	**5.31**	**8.06**	5.49	10.53	**7.94**	6.5	
Goods (Electric- KWH)								
2012-13	RED > IR	18.7	**20.2**	**21.2**	**19.3**	**19.7**	18.5	**18.9**
2013-14		18.7	**19.4**	**21.2**	**19.3**	**19.7**	18.5	**18.8**
2014-15		18.6	**19**	**21.5**	**19.4**	**19.7**	18.3	**18.9**
Target 2015-16		18.61	19.3	21.09	19.17	19.6	18.38	
Upto Jan' 16	RED > Target	**18.66**	**19.43**	20	**19.41**	**19.7**	**18.6**	



Thank You

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Coaching and Goods Services

- Capital & Revenue Accounts statement by Accounts Dept. - June
- Statistical statements compilation – September
- Unit cost compilation for Coaching and Goods – December/Jan (Rly Board)
- Escalation factor (Budget Estimate)

Stages of Traffic Costing- Stage 1

- Gauge-wise segregation of expenses.
- Direct allocation of gauge specific expenses.
- Common or joint expenses apportioned on the basis of certain ratios.
- The instructions for apportionment of joint expenses over different gauges booked under various Abstracts are contained in Appendix 1 of Instructions for compilation of Statement 30 in MSI (Volume II)

Stages of Traffic Costing-Stage 2

- Exclusion of expenses pertaining to EMU services.
- Share of EMU expenses is worked out separately for all relevant Abstracts.
- The method of allocation of joint expenses between sub-urban services and other services are contained in Appendix II of MSI (Volume II) as a part of instructions for compilation of Statement 15.

Stages of Traffic Costing-Stage 3

- Bifurcation of expenses of each gauge between coaching and goods services.
- As for as possible direct allocation under each Abstract to coaching and goods services.
- Proportion of expenses amenable to direct allocation is about <30%.
- Methodology of cost allocation between coaching and goods in accordance with instruction for compilation of Statement 15 contained in Appendix III (MSI Volume II).

COSTING OF COACHING SERVICES

- The expenditure pertaining to the coaching services (excluding EMU) follows the sequence of 19 stages of Division for arriving at the expenses on different facets of coaching services.
- Functional overheads are apportioned on pro-rata basis.
- Remaining overhead not directly allocable to any service is general overhead.
- General overheads are apportioned on pro-rata basis to arrive class wise cost are also shown separately.

COSTING OF COACHING SERVICES

- Running as well as terminal & overhead are consolidated class wise for passenger service, parcel luggage and catering service
- Compare with class wise earnings to arrive the profitability.
- Unit Cost
  - Passenger services
  a. Terminal activities (booking, Ticket checking etc.)
  b. Line haul cost (cost of traction, cost of transportation etc.)
  c. Provision & maintenance of passenger stock

COSTING OF COACHING SERVICES

- Parcel, luggage & postal services
  - Terminal
  - Line haul cost including provision & maintenance of stock.
- Catering services
  - Terminal
  - Line haul cost including provision & maintenance of stock.
- Expenses so grouped are divided by the corresponding performance to arrive at the unit cost.

COSTING OF COACHING SERVICES

Unit costs are worked out for various coaching services:

- Overall unit cost of services including overhead
- Overall unit cost of services excluding overhead
- Unit cost of mail/express, passenger, parcel luggage, catering and class wise unit cost for mail/express passenger excluding overhead
- Unit cost of ordinary, passenger, parcel luggage, catering and class wise unit cost for ordinary passenger excluding overhead

GOODS COSTING

- To allocate the goods expenses into certain physical operation such as running, terminal etc.
- Related exclusively to a particular function are allocated directly.
- The common expenses are bifurcated between running and non-running activities
- Non-running activities is reallocated to the functions duly based on survey ratio.

GOODS COSTING

Unit cost published by Board in two groups i.e. Group-A and Group-B

- Group-A
  - Not specific to any traction
  - Line haul cost for carrying unit and pay load separately.
  - Overhead are included in each element of cost
- Group-B
  - Specific to traction
  - Line haul cost for various activities
  - Overhead are not included and shown separately as a percentage

Limitations of Present Costing System

- Fully distributed cost
  - Variability of unit costs not scientifically arrived at.
- Aggregate costs at Zonal Railway level
  - Sectional and Division specific costs not available.
- Time consuming and very detailed

FUEL MANAGEMENT

New Financial Initiatives

Supply Chain Management

- Indian Railways consumes approx 2500000 MT HSD per annum
- Total number of RCDs provided by OMCs-258
- IOC-198,BPCL-47,HPCL-13
- Mode of supplies: by Rail-18.5%,by Road-80.5% &by pipeline-1%

Throughput at RCDs(IOCL)

Vol.KL/month	<500	501-1000	1001-2000	>2000
No of RCDs(198)	67(33.4%)	56(28.3%)	49(24.7%)	26(13.1%)
RCD Volumes (in ThMT)	178(8.2%)	414(19.0%)	712(32.7%)	874(40.1%)

Procurement and Consumption of HSD in 2015-16						
					Figures in Crores of Rs.	
	Consumption		Procurement		Variation	
	Rs in Cr.	KL	Rs in Cr.	KL	Rs in Cr.	KL
1	2	3	4	5	6	7
April	883.13		1149	225404	265.87	
May	871.15		1188	229205	316.85	
June	245.72		1409	258857	1163.28	
July	753.62		1560	294067	806.38	
August	720.11		1459	299487	738.89	
Total	**3473.73**	**828636**	**6765**	**1307020**	**3291.27**	**478384**
Per Day	**22.7**	**5415.92**	**44.22**	**8542.61**	**21.51**	**3126.69**

Average daily consumption (Rs. in Crore and KL)	22.7	5415.92
Procurement done for no. of days (Rs. and KL)	297.96	241.33
No. of days in the consumption period under review	153	153
Procurement in excess of Consumption days(Rs. and KL)	145	88
%age of excess procurement over consumption days (Rs. & KL)	95%	58%

Initiatives taken to reduce Inventory of HSD

- The inventory level reduced to 5-7 days in most RCDs/RDIs.
- CME, COS and FA&CAO reviewed and decided target inventory levels by November 2015
- Supply to RDIs reduced in staggered manner and exercise was completed by 31.1.2016
- Railway Board has issued instruction to General Managers for further review inventory level of those RCDs >7days

Projected Savings

Railways	Projected Savings during 2015-16(in Cr.)
CR	11.17
ER	2.095
ECR	16.72
ECoR	4.43
NR	9.70
NCR	5.70
NER	11.00
NFR	1.01
NWR	17.86

Projected Savings

Railways	Projected Savings during 2015-16(in Cr.)
SR	3.83
SCR	14.71
SER	10.79
SECR	6.01
SWR	14.86
WR	4.51
WCR	4.71
TOTAL	139.10

FC's observations

- Fuel holding pattern of RCDs require serious analysis
- There may be mismatch between storage capacity of RCDs and BTPN rake capacity over the Railway, resulting in delay in decantation and idling of the rake by 8-12 days
- Closure of smaller RCDs and shifting the supply point nearer to larger RCDs or by exploring the feasibility of transportation by road to these RCDs

New Initiatives

- Total Fuel Management
- Alternative methods of procurement of HSD
- Prevent leakages in RCDs
- Rationalization of manpower in RCDs
- Development of Fuel Management System through CRIS.

Total Fuel Management

- A pilot project at JP/NWR
- M/s BPCL has offered to undertake this project
- M/s BPCL has proposed to set up 290KL RDI in addition to 400KL RDI operated by M/s IOCL
- Under this system, the entire management and manning would be done by OMC.

Alternative methods of procurement of HSD

- **Crude procurement model**

or

- **High Seas procurement model**

Crude Procurement Model

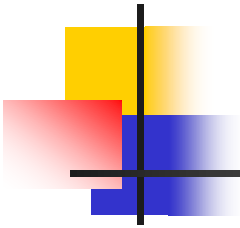
- Proper procedure needs to be developed for accounting and sales of derivatives
- Permission is required from MOP&NG for sale of derivatives
- Operating cost/refining cost/handling cost of crude for refining and supplying diesel is very important.
- Consultant is being engaged for this project and Joint working Group is formed to expedite the project

Crude Procurement Model

- Procuring crude and booking specific refinery to process that crude as a service
- Discussions are taking place with IOCL, three rounds already over
- As per estimates of IOCL there would be saving of Rs7000/KL if mix crude is processed
- Complex model because of production of other products along with diesel like ATF,Kerosene,LPG etc

High seas procurement model

- Direct import of finished diesel by purchasing at HIGH SEAS
- Permission for import is required(Policy Barrier),huge refining capacity available
- Custom formalities
- Storage and handling cost
- Less complex than previous model



Fuel Management system

- Elimination of oil wastage and to avoid any possible oil pilferage
- Computerized monitoring and reporting
- Overfill detection
- Accurate measurement and reporting

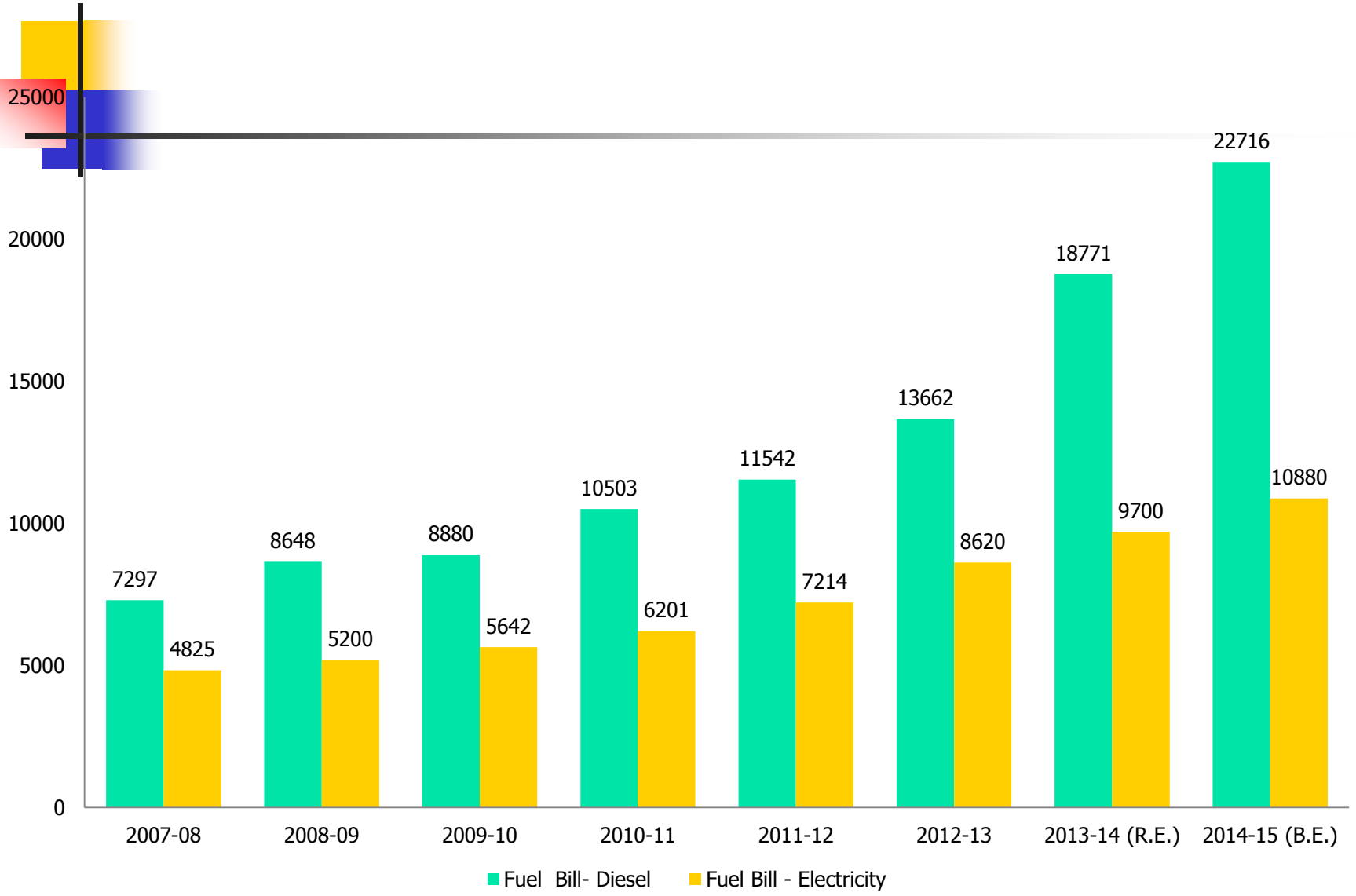
Electrical Energy

Challenges &
Initiatives

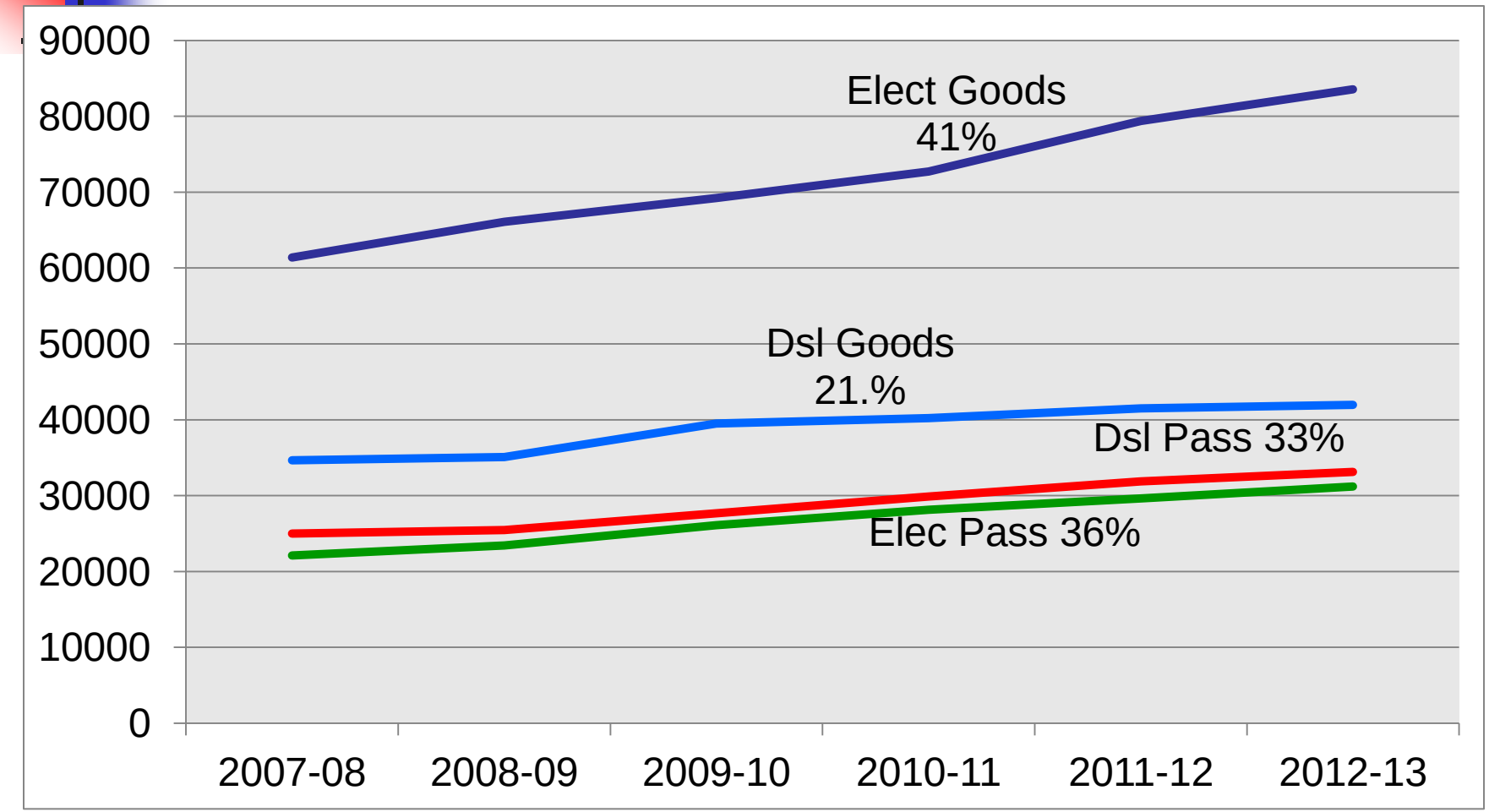
Growth of Fuel Bill for Indian Railways

YEAR	Expenditure on Power (Electricity)	Expenditure on Fuel (Diesel)	**Total**
2009-10	5655	8922	**14577**
2010-11	6206	10556	**16762**
2011-12	7236	11601	**18837**
2012-13	8634	13749	**22383**
2013-14	9650	18875	**28525**
2014-15 (RE)	10968	19226	**30194**

Increase in Fuel Bill



GTKMs Growth (5 Years)



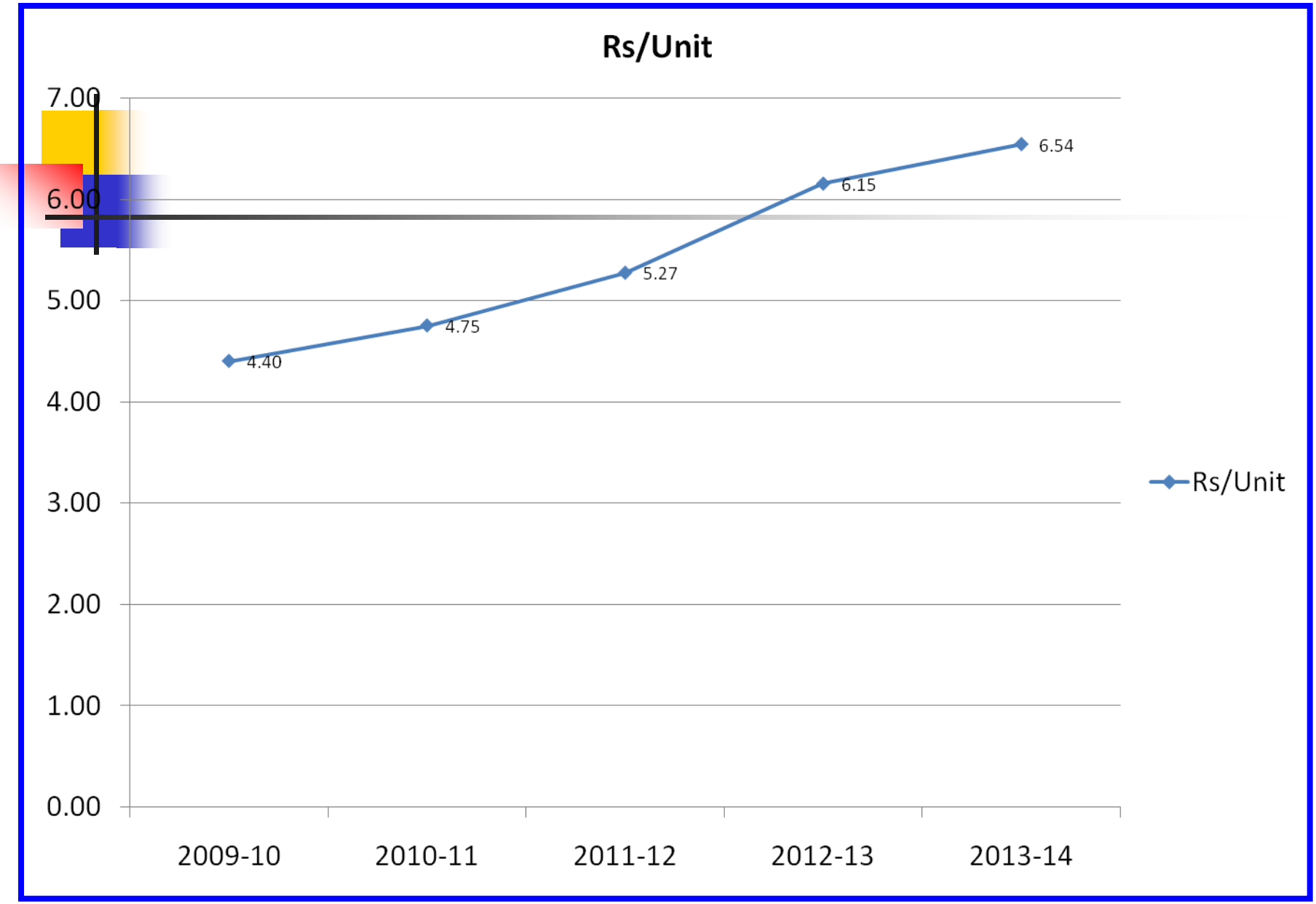
ELECTRIC TRACTION- Key Statistics of 14-15

- About 26000 RKM (39.92%) electrified.
- Hauling about 67% Freight and 50% Passenger traffic.
- Fuel expenses 37% (Rs. 10963 Cr) out of Rs. 29234 Cr
- Consumes 17 Billion units (1.7% of total generation)

Existing Consumption (2014-15)

- Traction: 15.00 BU
- Non Traction: 2.50 BU
- Total: 17.50 BU

- Est. Electricity Bill- Rs 11,500 Crores


Rs/Unit
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
4.40
4.75
5.27
6.15
6.54
2009-10
2010-11
2011-12
2012-13
2013-14
Rs/Unit

S.No.	Energy Charges (Traction) for 2014-15 (Up to September - 2014 Provisional))			
	DISCOMs	energy consumed (mil Kwh)	Total energy bill paid in Crores.	Average cost Rs/Kwh.
1	2	3	4	5
1	APTRANSCO	709.67	507.68	7.15
2	BSEB	260.77	162.89	6.25
3	CSEB	429.45	239.98	5.59
4	DVB	35.93	28.63	7.97
5	DVC	326.02	124.71	3.83
6	GEB	377.91	241.47	6.39
7	GRIDCO	397.21	243.88	6.14
8	HVPN	167.59	118.84	7.09
9	JSEB	208.82	129.66	6.21
10	KSEB	108.19	58.51	5.41
11	KPTCL	29.36	16.24	5.53
12	MPSEB	969.15	582.49	6.01
13	MSEB	751.99	703.08	9.35
14	TATA	463.71	361.73	7.80
15	NTPC	339.35	223.09	6.57
16	PSEB	81.89	51.59	6.30
17	RSEB	199.45	107.97	5.41
18	TNEB	738.96	508.26	6.88
19	UPPCL	446.71	329.37	7.37
20	WBSEB	407.00	321.05	7.89
21	UPCL	7.04	3.08	4.38
22	CESC	26.96	19	7.05

Directives of Hon'ble Minister - Para 106 of the Budget speech 2015

Although a bulk consumer, Railways pays extremely high charges for traction power. It is proposed to procure power through the bidding process at economical tariff from generating companies, power exchanges, and bilateral arrangements. This initiative is likely to result in substantial savings of at least Rs.3000 crore in next few years.

49.In my Budget Speech last year, I had promised annualized savings of Rs. 3,000 crore to be achieved by the third year. It is about 30% of the total traction supply cost. I am happy to announce that the target will be achieved in the next financial year itself, a year earlier than envisaged. For the first time, IR has leveraged provisions of the Electricity Act to procure power directly at competitive rates, using its status as Deemed Distribution Licensee. Power Procurement Contracts already signed and implemented will mean an annualized saving of Rs. 1,300 crore. Further actions to source power, already initiated, will deliver annualized savings of Rs. 1,700 crore during the coming year, taking the total to Rs. 3,000 crore. In addition, the saving of Rs. 300 crore is being targeted through demand side management and energy efficiency measures.

Possible methods to Reduce the Cost of Power Procurement

1. Indian Railways to migrate from DISCOMs to GENCO
2. Improve efficiency of power utilization
3. Using of regenerative braking and metering of the same
4. Go for Renewable Energy

GETTING ELECTRICITY AT ECONOMIC TARIFF

Direct Procurement of power from Generators/ Traders-

- As deemed Distribution licensee IR can now buy power directly from generators/ Traders under Electricity Act 2003.
- For this Open Access has to be obtained. It can be for Short/Medium/Long terms(Section 38, 39 & 42 of Electricity Act 2003)
- Steps for this are:
- Selection of GENCOs/Trader through open bidding/ Bilateral arrangements
- Signing of PPAs /Agreement with GENCOs /Traders

Direct Procurement of power from Generators/ Traders-

- Applying for NOC to SLDCs of generating and consuming states
- SLDC before giving NOC will ensure

  (i) ABT meters at STU and TSS ends

  (ii) Transmission capacity in the state network

  (iii) Valid PPA
- After obtaining NOC from SLDC apply to CTU/PGCIL
- Signing of Agreement with CTU.

Procedure for Issuance of NOC from SLDC for power trading

Step 1:- Agreement between Railway & Client PPA

Step 2:- Submission of Application to SLDC for Approval.

Step 3:- Issuance of Conditional Approval by SLDC.

Step 4:- Procurement of ABT Meter.

Step 5:- Inspection & Testing of ABT Meter by Authorized Agency.

Step 6:- Submission of Application for NOC.

Step 7:- Issuance of NOC By SLDC.

Step 8:- Bidding Start at PX from Next Day.

Cost involved in procurement of power

- Cost of electricity at generator end

  (Rs 4.00/kWh)
- CTU charges including POC charges (injection & drawal- Rs. 0.49), losses(Rs.0.16)
- Wheeling charges of STU differ from state to state

  (Rs 0.35/kWh)

INITIATIVES TO REDUCE ELECTRIC TRACTION BILL

Power through bi-lateral arrangement:

1. 50 MW NTPC power in NCR replaced with DVC power

- Saving achieved : 10.75 Cr per month
- will result in a saving of about Rs. 100 Cr. per yr.

2. PPA for 100 MW power signed with GUVNL on 5.03.15

- Open Access permission obtained from Gujarat
- Application for open Access moved in Maharashtra

MEASURE TO REDUCE ELECTRIC TRACTION BILL

- Tenders for 1060 MW power from market floated
- Take up Construction of Transmission lines-
- Work on Transmission corridors for Railways between CNB ALD MGS in progress for having connectivity with PGCIL
- Work for Transmission line from Sahibabad to Diwana is under progress
- This will facilitate in wheeling of power without involvement of state transmission network at a lower cost.
- Have Captive Power plants
- Take up matter with State Regulatory bodies

Migrating from DISCOMs to direct procurement.

Migration methodology

- .%age of existing traction loads -directly connected to STU (thru railway owned lines) - phased manner - 2015-16 and 2016-17.
- Future additional loads to be migrated in same ratio.
- Migration in States only where cost of power is high.
- The requirement of States (including future requirement) where migration has not been considered shall continue to be met from the existing arrangement.

Measures taken to reduce electricity bills:-

Activities	Investment	Saving
Short term measures :		
•**Coordination with State Electrical Regulatory Commissions**	Nil	Rs.10-100 Cr
•**Power through unscheduled interchange (UI) Mechanism**	Nil	Rs. 600 Cr/ location
Medium term measures:		
•**Power trading activity** •**Procurement of power through bi-lateral arrangements**	Nil	Rs. 8 Cr/ location
•**Harnessing of solar energy**	Nil	Rs 1.5/Kwhr
Long term measures :		
•**Setting up of Captive Power Plants**	Rs. 500-800 Cr	Rs.500-900 Cr/Year
•**Construction of transmission lines by REMCL with PGCIL**	Rs.30 lakh/Km	Rs 1.5/Kwhr

Actionable points Electrical loco

• Line haul cost of Electric traction is 44% less than diesel, hence optimize running of Electric locos in electrified territories.

	Freight				*Coaching*			
Year	2008-09	2009-10	2010-11	2011-12	*2008-09*	***2009-10***	***2010-11***	***2011-12***
DSL	169.87	158.6	165.37	176.47	*251.49*	***239.31***	***269.72***	***275.22***
Elect.	89.99	90.55	97.24	98.75	*165*	***128.16***	***143.55***	***157.52***
%age Cheaper	47.0	42.9	41.2	44.0	*34.39*	***46.45***	***46.78***	***42.77***

• More than 10 % Freight trains and more than 500 coaching trains run on Diesel under wire. Trains for change of traction from Dsl to Electric can be identified based on kms under wire, availability of crew/loco changing facilities at Zonal Railways level by constituting a committee comprising of officers of Traffic, Electrical and Mechanical departments.

•3-Phase locos re-generate on an average 15 % of energy consumed.

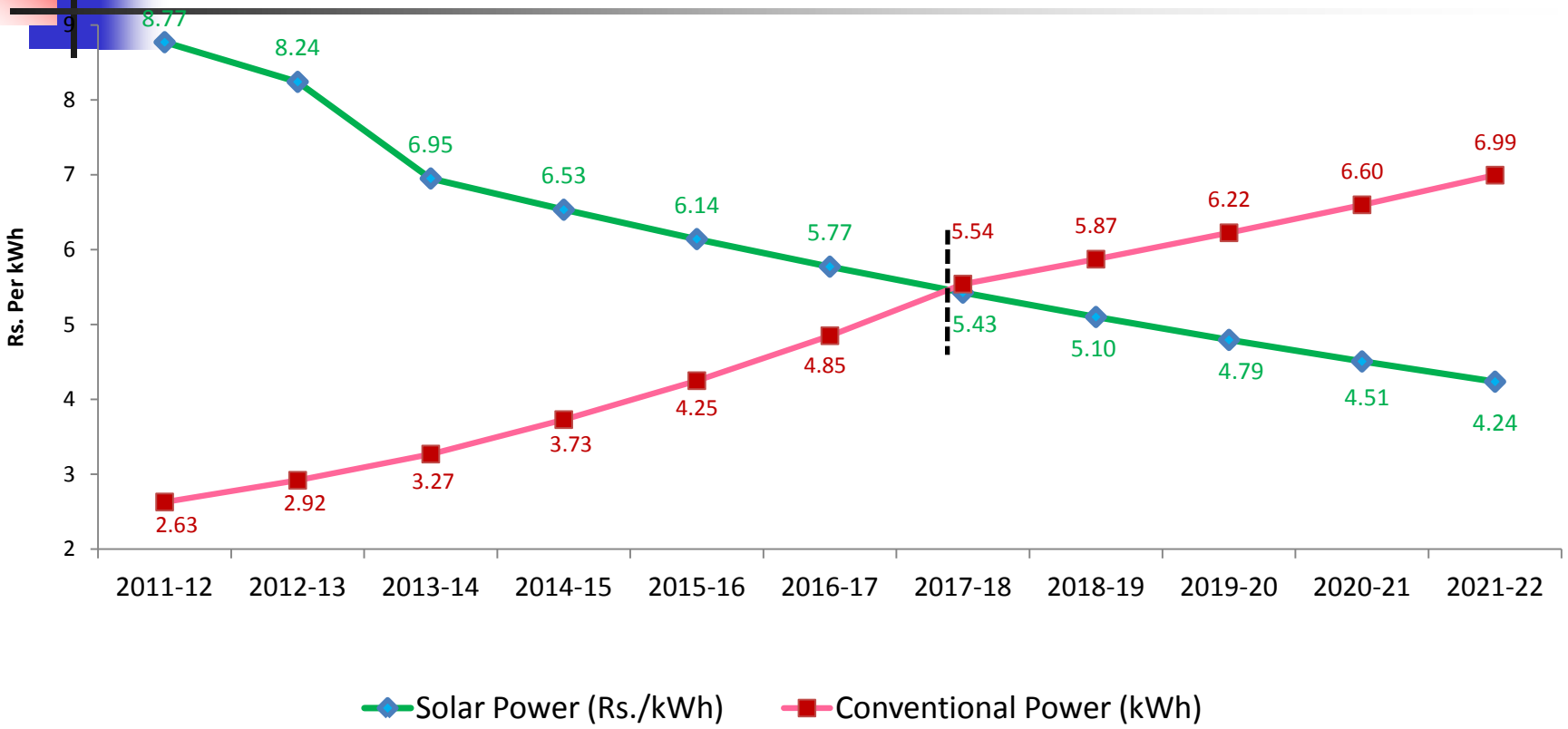
•More three phase energy efficient electric locomotives having regenerative braking feature are being manufactured and inducted. Plan to complete switch over from 2015-16.

Production up to 2009-10	2010-11	2011-12	2012-13	2013-14 up to Feb 2014	Production in last 4 years
320	**70**	**76**	**110**	**128**	**384**

Railway wise OHE assets

SN	Railways	TKM	TSS
1	CR	5361	73
2	ER	4204	19
3	ECR	4567	27
4	ECoR	3723	35
5	NR	5543	29
6	NCR	4388	40
7	SR	5052	34
8	SCR	5926	39
9	SER	5786	33
10	SECR	3607	22
11	SWR	490	3
12	WR	4107	31
13	WCR	3752	25
14	Metro	72	4
Total		56578	414

Cost-comparison of Solar Power



- Price of solar power has come down from Rs 17.91/kWh in 2010 to under Rs 6.5 /kWh now.

Solar power will achieve grid parity within the next 3 years

Solar Photovoltaic based electricity generation in Indian Railways- **Aim:**

- **To take benefit of reduced costs**
- **To fulfill renewal targets**
- **Use free railway rooftop and land spaces**
- **Explore new potential areas- Using Rly land parallel to Tracks**
  - **For 100 MW of solar power lifetime GHG emissions reduction of 5,201,000 tones of CO2**

Key elements and challenges

- Developing technically feasible model-

  Types of roof tops

  Land Patches- Sizes

- Address Grid connectivity issues
- Take benefit of net metering and banking

  State policies differ

- Address connectivity issues
- Address maintenance issues

Future Scenario- 2030

1. Present Power consumption is about 4000 MW.
2. By 2030 -

- With almost 100% electrification of present rail network,
- DFCCIL network of at least 7000 RKM,
- Some new high speed (350 Kmph) corridors,
- Few tracks upgraded to 160 to 200 Kmph and
- With total loading of about 5-6 billion metric tonnes (as per projection of National Transport Development Policy Committee for 2032), the total power requirement on Indian Railways will be about 20000 MW.

Future Scenario- 2030

- For sustainable economic growth this power should be made available to Railways at a competitive cost
- To ensure reliability Railways to have connectivity with CTU networks.
- CTU to build complete transmission network of about 20000 Kms for Railways
- Railways to Plan for a judicious mix of renewable and thermal power.

Board's directives

- Vetting of PPAs on priority
- Making necessary arrangement for Availability Based Tariff
- Get NOC from state governments on priority
- Review Contract Demand(CD) in the light of merging of TSS demands and projected change in traffic pattern

Projected Traction Power Cost in 2016-17

- Projected traction bill for the year2015-16=

  Rs 10300 Cr
- Increase due to additional load@5% over last year= Rs 525 Cr
- Likely bill for 2016-17= Rs 10825 Cr
- Projected savings in 2016-17= Rs1000 Cr due to various initiatives
- Projected bill for 2016-17= Rs 9825 Cr

Railway's Transmission Network

- In the areas where railways have its own transmission network-Price of power has come down to Rs 3.70 per unit against the average value of Rs 6.75 per unit
- Railway will be free from seeking any NOC from states
- Additional savings on the STU charges of about 50-70 paisa per unit
- Railways consumption for all centers can be clubbed

Long Term Planning-FC's directives

- Railway as deemed licensee should develop necessary infrastructure to avail cheaper power from the market.
- To create infrastructure will require huge resources,JV route between IR and PGCCIL be explored to construct and maintain transmission lines
- DFCCIL too should be brought into this transmission network to take benefit of cheaper power,by developing synergy between power networks of Railways and DFCCIL both on eastern and western corridors

Long Term Planning

- In WDFCL ph-1 DFC entered into arrangement with state DISCOM and STU for power procurement and evacuation-DFC has been asked to review this because open access is denied under this arrangement
- DFC is working on that. Apart from that DFC and Railway will club their TSSs to reduce cost
- In WDFCL ph-2 DFC planned a transmission line constructed by PGCCIL and the same will also be used by Railway

Thank You

धन्यवाद

Pension Management

The Indian Railway Story

Facts and Figures

- Number of pensioners: 14,50,000
- drawing pension from 25 Nationalised Banks
  - Approx 10,00,000 more will be added @ approx 55000 P.A. by 2030
- No single CPAO
  - Pension disbursed through- Banks (95%), State Treasuries (1%), Post Offices (4%).
  - 16 zones nominated to accept/ settle pension debits received from Banks as per regional jurisdiction
  - States are attached with Zonal Railways for Pension Debit purposes
    - Eg. Maharashtra is attached with Central Railway
  - Pension debits in respect of pension disbursed through State Treasuries and Post Offices settled by Railways that issued PPOs.

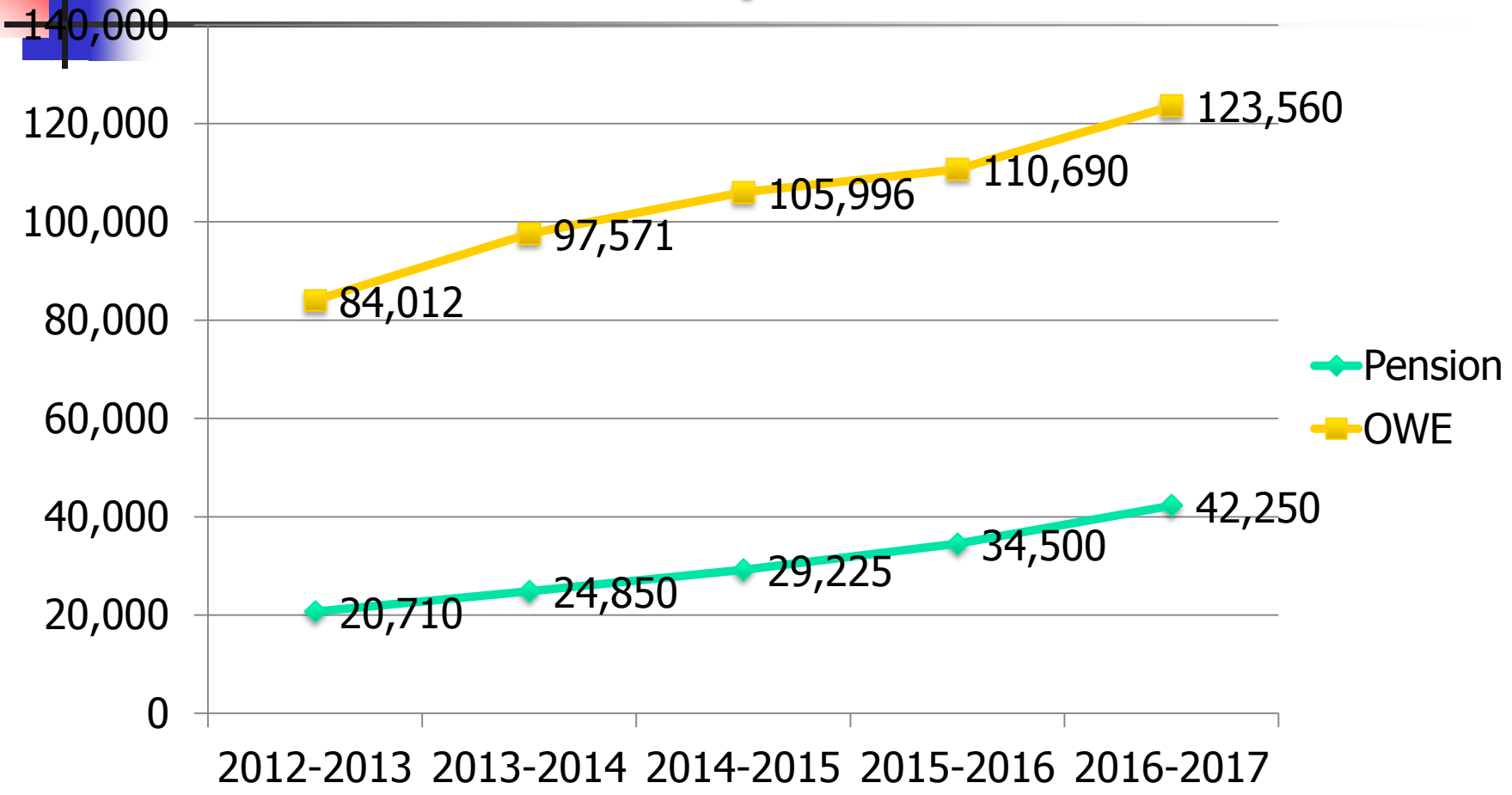
PENSION LIABILITY

- Only ministry of GOI to finance its pension liability
- Budget speech 2015-16 by MR - Accounting reforms Process & greater transparency in financial reporting.
- It includes -Accrual accounting so as to make contribution to DRF on scientific basis & ***Pension Liability on Actuarial assessment basis.***
- ***N***on provision of Pension Liability on accrual basis and Depreciation provision in scientific manner has led to incorrect depiction of Operating Ratio.
- Actuarial Study done in 2005 pointed out huge liability of Rs 5,41,948 crores required for making the pension fund self-sustaining .

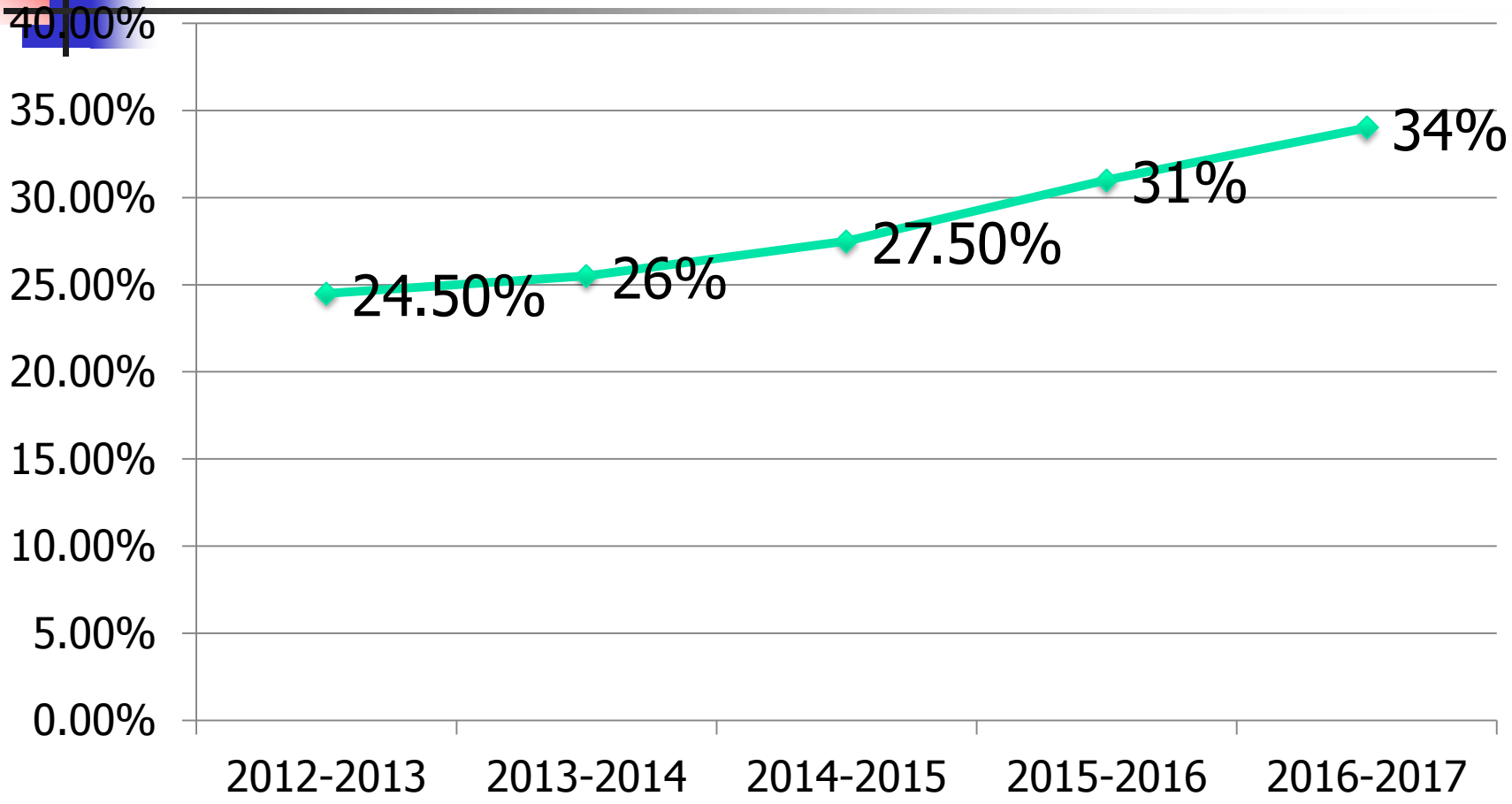
PENSION LIABILITY

- Pension is paid after cessation of service, though the same is earned by the employees during their service period. Thus, it should form the part of cost of Railways' operations etc, in the accounting periods in which it is earned. ***This can be done by appropriate debit to P&L and by keeping the provision at the Liability side of the Balance Sheet in the Pension Fund.***

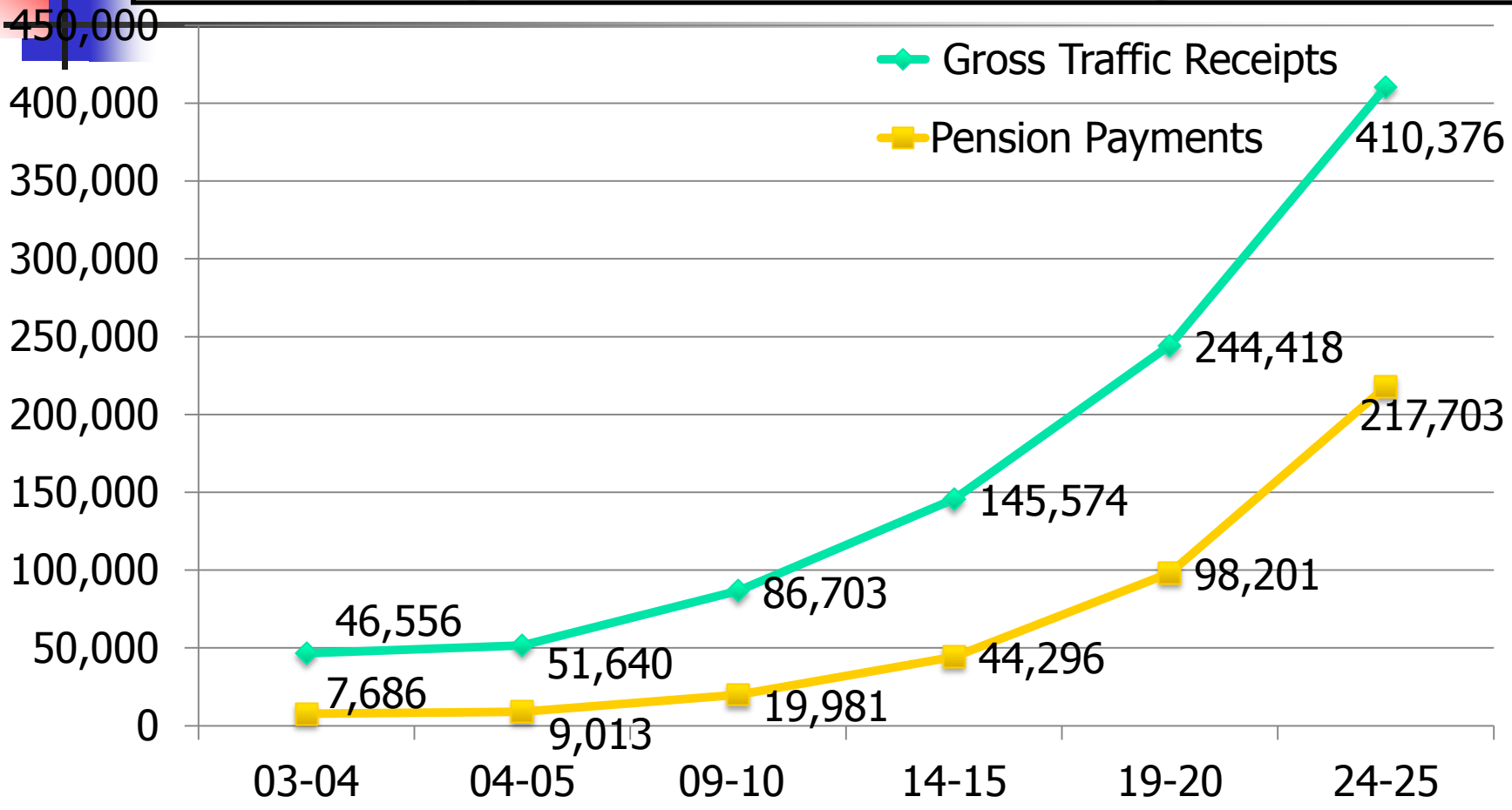
OWE and Pension Expenditure



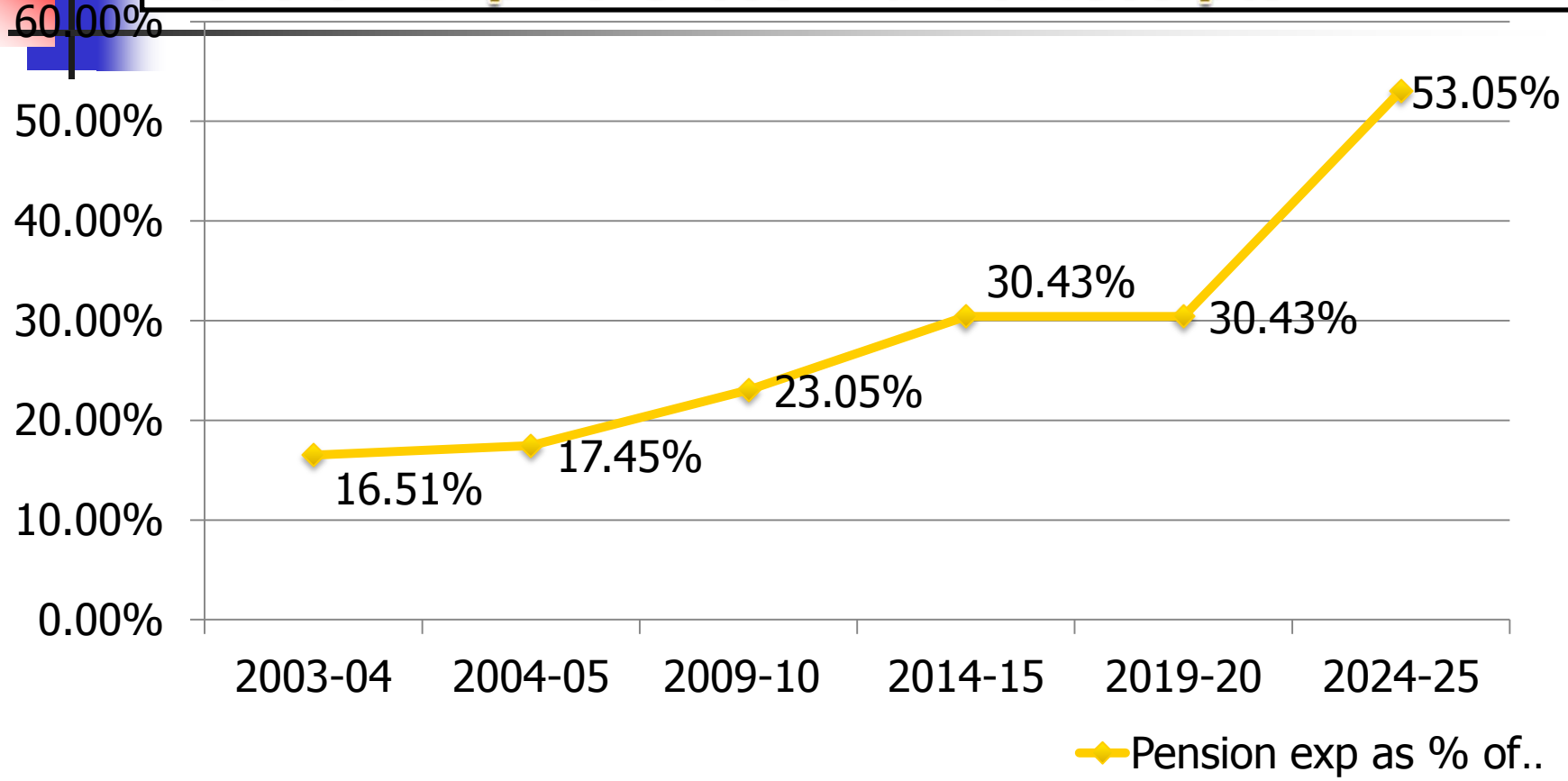
Expenditure on Pension as % of OWE



Pension Exp Vs Gross Traffic Receipts



Pension Exp Vs Gross Traffic Receipts



PENSION LIABILITY

- GTR is growing at a rate of 10.92 % p.a whereas pension expenses are increasing annually at a rate of 17.26%. Rlys will spend about 1/4th of its earnings on Pension by the end of this decade, & by 2024-25, IR may have to spend more than half of earnings as pensions.
- Longevity is increasing.
  - Increase in Additional pension liability
- major portion of employees are between age group of 50-59 years. (Sample data: WR)
- Number of retirees (superannuation) will continue to be @ 3.8% of working strength i.e 48000 Per annum
- In addition the number ONR cases occurs each year is about 7,000 cases (death ,Voluntary etc)
- Out of 13.25 Lakh working strength 10 Lakh employees still governed under old Pension scheme which are to be added to the present pensioners list @ 4% each year. By considering deceased pensioners accounts, the net increase in number of pensioners is about 30,000 (2.5%) per annum.

Challenges

- Ineffective reconciliation process
  - Problem of watching recovery of overpayments
- Challenge of accurate budgeting
- Challenge of frequent revisions and revisions due to pay commissions.
- Grievance redressal mechanism.
  - Delays in start of pension disbursement.
- Postal and treasury pensioners (54847+4607)

Reconciliation

Sl	Bank	Quantum of monthly scroll	Matched data	Matching %
1	State Bank of India	5,35,00	3,30,000	62
2	Bank of Baroda	60,500	39,000	63
3	Punjab National Bank	1,15,000	56,000	50
4	Union Bank of India	38,500	16,200	42
5	State Bank of Mysore	6,000	3,000	50
6	Bank of Maharashtra	41,000	25,000	62
7	Bank of India	70,000	21,000	30
8	Central Bank of India	56,000	25,214	33
	TOTAL	9,22,000	5,15,414	56

Reconciliation

- Challenges
  - Availability of debit scroll data in ARPAN
  - Slow response of banks in providing debit data
  - Difficulty in matching debit data with master
    - Errors in PPO number as provided by banks
    - Absence of updated Bank account numbers in Pension Master
    - All zones followed non uniform PPO No Scheme due to which there is no common identifier of

Age-wise analysis based on scroll data

Age group	Pension	% of Total Pensioners	Family Pension	% of Total Pensioner	Total
60 Years and Less	65,000	4	1,01,500	7	1,66,500
60 and < 70	3,84,000	26	2,06,000	14	5,90,000
70 and < 80	3,15,000	22	2,43,000	17	5,58,000
80 and < 90	1,04,000	7	25,000	2	1,29,000
90 Years and above	4,000	0.28	2,500	0.17	6,500
Total	8,72,000	60	5,78,000	40	14,50,000

Age analysis as per 7th CPC

	7TH PAY COMMISSION	PENSION MASTER (ARPAN)	DEBIT SCROLL(SBI)	DEBIT SCROLL(PNB)
60-70 YEARS	582847	577592		
	42.37%	47.16%		
70-80 YEARS	506543	385547	500442	**105193**
	36.82%	31.48%	93%	92.50%
80-90 YEARS	230409	174810	34928	**7812**
	16.75%	14.27%	6.51%	6.87%
90-100 YEARS	55684	49817	2795	**653**
	4.05%	4.06%	0.50%	0.57%
TOTAL	1375483	1187766	538165.93	**113658**

80 yrs and above Rly pensioners as per 7th CPC = 20.8% , As per Pension Master = 18.91% and as per Bank D Scroll = 7.25%, National Avg = 11.13%

7th PC Revision for Existing Pensioners

Figures in Crore of rupees

Basic Pension	Revised Basic (multiplying factor 2.57)	Old age Pension	FMA	Total	Total per annum	6% DR expected in 2nd half	Total 2016-2017
1	2	3	4	5(2+3+4)	6	7	8 (6+7)
842	2164	40	32	2236	26832	130 x6m =780	27,612

Budgeting for 2016-17 including 7PC revision

	Particulars	Number of Pensioners	Total Annual Liability (Cr)	Impact
I	Existing Pensioners (14,50,000)	14,50,000	27,612	(+)
II	New Pensioners during the year	55,000	400	(+)
III	Approx. 12,750 cases @1.5 %of pensioners convert to family pension	12,750	150	(-)
IV	Approx.26,000 cases close each year	25,000	400	(-)
Total		14,80,000	27,462	21% increase over 15-16

Note : This does not include Settlement dues (DCRG, Commutation, Leave Encashment ,CGEGIES etc)

Number of IR Pensioners

GROUP	Pensioners	Family Pensioners	Total	%
A	5,100	3,400	8,500	0.6
B	10,400	6,800	17,200	1.20
C	7,17,500	4,70,000	11,87,000	80.00
D	1,52,000	1,05,700	2,57,300	18.20
Total	**8,72,000**	**5,78,000**	**14,50,000**	

Way Forward

- Debit scroll data has been forwarded to all zones for matching
  - Target set for completion of this exercise is
- All remaining banks are being impressed upon to adopt eDebit scroll and ePPO
- ARPAN is being readied to tackle 7th PC revision
- Banks have been asked to share AADHAR Nos of pensioners – to enable 'Life Cert' collection and direct payment
  - Approx 3lakh AADHAR No have so far been collected

Direct Payment

Pro

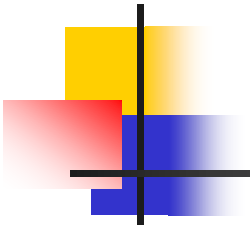
- Possible with accurate master
- Being done for death cases of NPS subscribers
- NO NEED for reconciliation
- Greater accuracy and control over payments.
- Ease of revisions.
- ARPAN is capable

Con

- Monthly payment data will have to be sent bank for electronic payment
- Handling of failed transactions.
- Income Tax - issue of Form 16
- Problem of collecting 'Life Cert'
- Loss of human interface for pensioner.
- Costs

- Award for Best Innovation given by ORACLE

- Award of Appreciation received from Computer Society of India for the year 2014-15



THANK YOU

New initiatives in IR Budgeting

18.05.2016

NAIR

OUTLINE OF THE PRESENTATION

- Budget 2016-17
- New Initiatives

FR 2015-16 (Approximate)

(Rs in crore)

Earnings	2014-15	Targeted growth in RE 2015-16	Growth achieved
Passenger	42189.61	7.6%	4.9%
Other Coaching	3997.89	8.2%	9.2%
Goods	105791.34	5.7%	3.0%
Sundry	5092.74	22.3%	13.5%
Total Earnings	**157071.58**	**6.8%**	**4.0%**
OWE	105996	4.4%	1.6%

CPC	implemented in the year	Impact year	O.R.
	pre-4th CPC	1985-86	90.6%
4th	Sept. '86 (pay benefit from 1.1.'86)	1986-87	**92.2%**
		1987-88	**92.5%**
		1988-89	**93.0%**
		1989-90	**91.5%**
		1990-91	**92.0%**
		1991-92	89.5%
		1992-93	87.4%
		1993-94	82.9%
		1994-95	82.6%
		1995-96	82.5%
		1996-97	86.2%
5th	Oct.97 (pay benefit w.e.f 1.1.'96)	1997-98	**90.9%**
		1998-99	**93.3%**
		1999-2000	**93.3%**
		2000-01	**98.3%**
		2001-02	**96.0%**
		2002-03	92.3%
		2003-04	92.1%
		2004-05	91.0%
		2005-06	83.2%
		2006-07	78.7%
		2007-08	75.9%
6th	Sept.08 (pay benefit w.e.f 1.1.2006)	2008-09	**90.5%**
		2009-10	**95.3%**
		2010-11	**94.6%**
		2011-12	**94.9%**
		2012-13	**90.2%**
		2013-14	**93.6%**
		2014-15	91.2%

Components of O.R.

Operating Ratio = {(OWE excl. suspense) +Approp.to (DRF+Pension Fund)}

Total Earnings from (Pass.+Other Coach.+Goods+Sundry)

ITEM	Share in Pie BE 2016-17	% growth over RE 2015-16
Staff costs	57% of OWE	23%
Fuel	19% of OWE	-13%
Stores	6% of OWE	6%
Lease	7% of OWE	12%
Others	12 % of OWE	17%

Other components for calculation of OR: Pension (23.2% growth over previous year) and DRF (-41% growth over previous year)

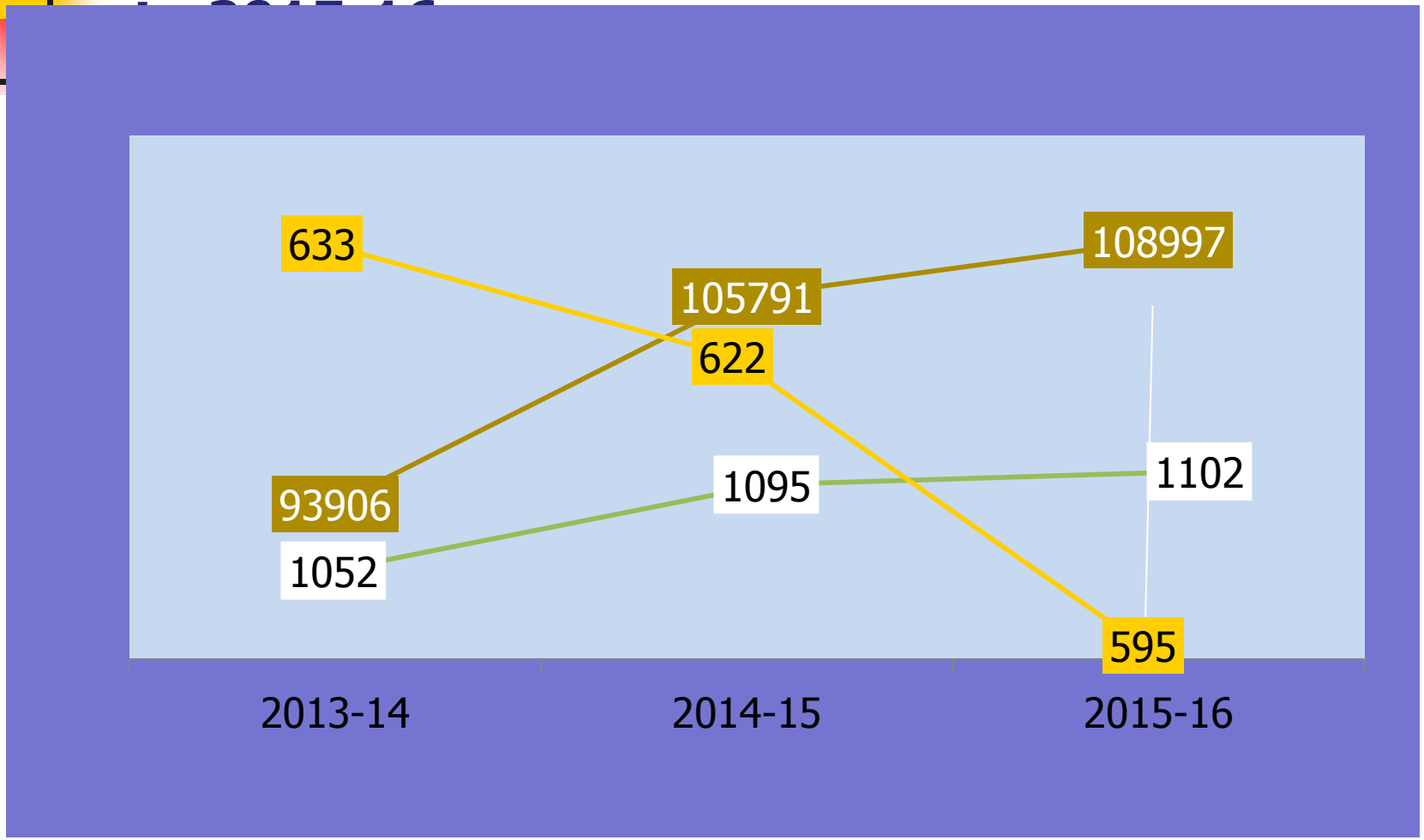
OR continued….

- For 2016-17,assessment of operating ratio based on concrete action plan prepared by the Railway Board
- 2015-16- Savings of Rs. 11,701 crore over BE neutralizing most of the revenue shortfall, expected OR 90.6%;
- 2016-17- Targeted Operating Ratio (OR) - 92%:
  - restrict growth of Ordinary Working Expenses to 11.6% after building in immediate impact of 7th PC,
  - reductions planned in diesel and electricity consumption,
  - Revenue generation targeted at Rs. 1,84,820 crore.

REVENUE TARGET

- Total loading 1157 mt : Zone-wise targets fixed
- Assumptions:
  - Incremental 50 mt loading in Freight anticipated: *of which* coal 22 mt, cement 6 mt, foodgrains 2 mt, iron ore 6 mt, pig iron & finished steel 3.2 mt, container traffic 2.5 mt., others 3.75 mt
- Focusing on investment in capacity enhancement works and preparing an operating action plan to achieve the targets.
- For sustaining the debt coal transportation targeted to go upto 1.5 billion tonnes by 2019-20 from the present 612 million tonnes. .
- By 2025, 300 mt of steel required to be transported which will also require transportation of 500 mt of iron ore, 150 mt of coking coal and 950 mt of dolomite & limestone.
- Originating passenger estimated to grow at 1%. Passenger revenues are expected to increase by 12.4%.Measures such as running new train services like Tejas and Humsafar which will recover costs completely; add capacity for reserved travel, with more 3AC services.

Trends in Loading, lead & Earnings from 2013-14

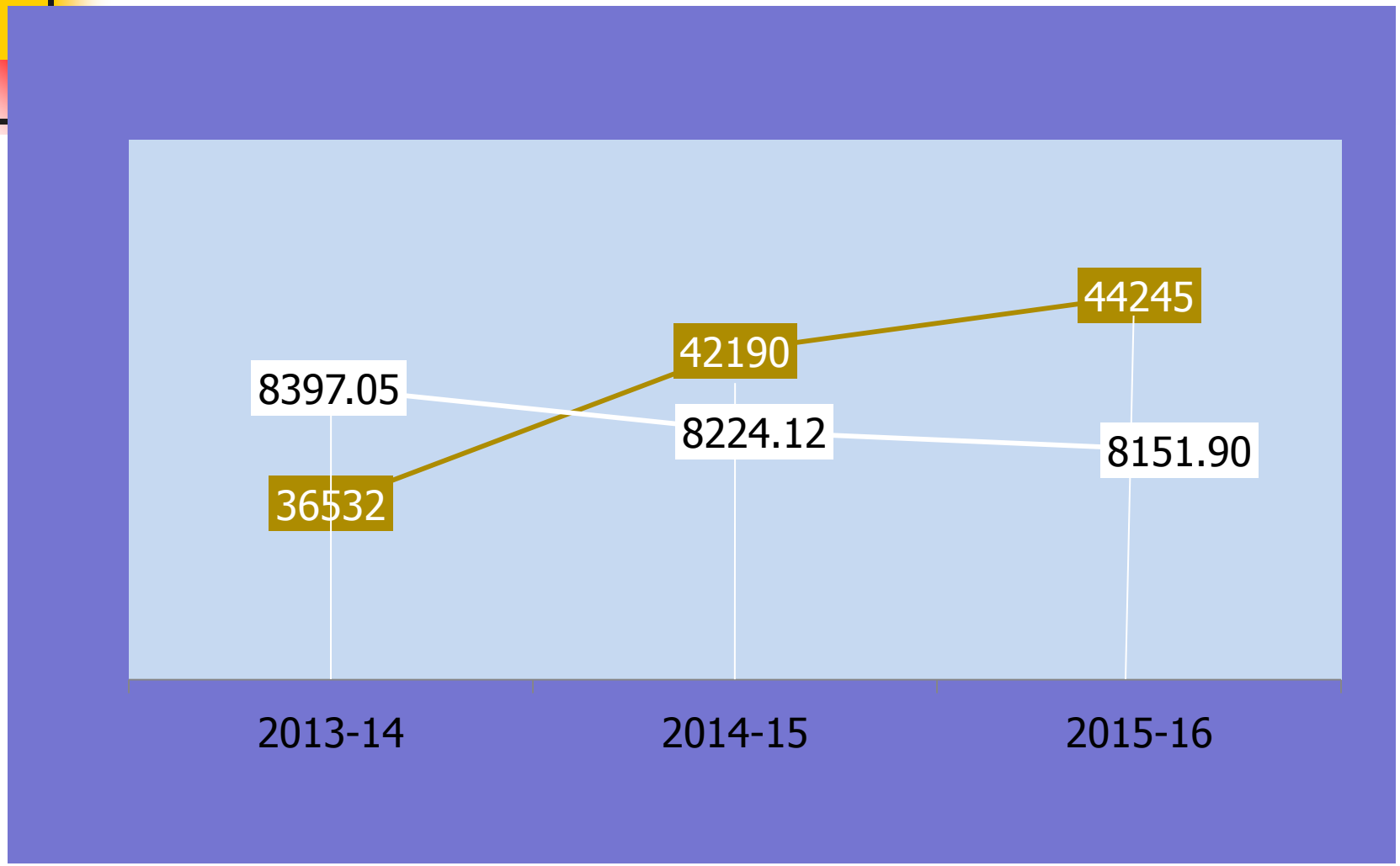


Rs in crore

In million Tonne

Lead in KMs

Trends in Originating Passenger & Earnings from 2013-14 to 2015-16



Rs in crore

In million

CAPEX plan 2016-17

CAPEX PLAN 2016-17	Rs. in crore
Gross Budgetary Support from Finance Ministry	34220
Capital fund to meet lease charges	7000
Depreciation Reserve Fund	7160
Development Fund	2515
Safety Fund	10780
Bond issued by IRFC for Rolling Stock	20000
Extra Budgetary Resources/Institutional Financing (LIC)	20985
Partnerships	18340
Total	121000

Category	Source of Funds	2015-16 Capex (Rs. Crore) Approx	2016-17 Capex (Rs. Crore)
Capital	Ministry of Finance GBS	35058	34220
Capital fund (For Lease payments)	Internal Generation	6320	7000
Depreciation reserve fund	Internal Generation	7378	7160
Development fund	Internal Generation	2876	2515
Safety fund	Ministry of Finance through Road Safety Fund (Diesel Cess appropriation)	2506 + 155 (from DFC)	10780
Extra Budgetary Resources	Market borrowing by IRFC for Rolling Stock Purchases + Institutional financing by LIC + State JVs, JVs with other PSUs (Coal India, NTPC) and PPP in Railways (Port development, Station Development, Manufacturing Units etc), Wagon leasing, PFTs/ Sidings, State government's contribution to rail assets like ROBs/RUBs	39486	59325
Total		93805	121000

Debt Trap

World-wide, for financing Railway infrastructure, the debt undertaken had been as under:

- German Railways in 2013 had total revenue of Euro 39 bn and had net financial debt of Euro 16 billion.
- Chinese Railways before its corporatisation in 2013 had a debt of USD 428bn
- China Railway Corporation's total liability by end of March 2013 was 2.84 trillion Yuan with assets of 4.68 trillion yuan. Corporation debt to asset ratio is 62%
- Russian railway attracted USD 50bn of private investment
- JR east has a total asset of USD 72bn and interest bearing debt of USD 32bn.
- IR lease payments for debt servicing is 7.9% of the Gross Traffic Receipts (to end of March 2016).

PARTNERSHIPS

- **Engagement with any third party where it makes capital investment for creation of Rail-based infrastructure.**

. **In tune with the National PPP policy :**

- Long term contractual arrangements
- Between govt/statutory body/government owned entity and a private sector entity
- For investments being made and/or management being undertaken by the private entity
- Where there is a well-defined allocation of risk between the private and public entity
- Private entity receives performance linked payments that conform to specified and pre-determined performance standards, measurable by the public entity, or its representative.
- Common arrangements include – BOT, Build-Lease-Transfer, DBFOT, Operate-Maintain-Transfer (OMT).

. **Includes cost sharing arrangements by state govts and others, investments towards wagon leasing, sidings, PFTs, capital investments by Railway PSUs, CSR funds, MPLAD, PPPs, etc.**

Physical parameters

- Pre 2014, **average commissioning** of Railway lines was 1500 kms per year. In the last two years, the commissioning of BG lines has improved to 2300 kms per year which is an improvement of 50% **.**
- In the last 10 years on an average of 807 kms of Railway **Electrification** was carried out whereas this has increased to 1,500 kms per year.
- **90 new projects involving a total investment of Rs. 1,26,172 crore covering about 8,432 kms covering new line, doubling, gauge conversion and Metropolitan Transport Project (MTP) included in the Budget.**
- In 2016-17, Broad Gauge lines at the rate of over 7 km per day against an average of about 4.3 Km per day in the last 6 years. This pace will increase to about 13 kms per day in 2017-18 and 19 kms per day in 2018-19 while providing employment to 9 crore mandays and 14 crore mandays respectively**.**

Depreciation: Provisioning on resource availability basis

- Accumulated arrears of Track Renewal been coming down i.e. from 7258 km in 2008-09 to 5300 km in 2014-15.
- Over aged wagons come down from 14649 in 2007-08 to 6177 till 31.3.2014.

Year	(Rs.in cr.)	DRF	Staff cost as % of GTR	Pension as % of GTR	Debt* as a % of GTR	Debt servicing as a % of GTR
	Appropriation	Fund Balance				
2009-10	2287	5	42.80%	19.10%	30.20%	12.60%
2010-11	5615	19	38.20%	16.90%	29.80%	11.90%
2011-12	6720	5	37.60%	17.20%	33.40%	12.70%
2012-13	7050	10	34.70%	17.00%	31.70%	11.80%
2013-14	8100	1021	33.60%	17.70%	30.30%	13.50%
2014-15	7975	1777	33.20%	18.40%	26.50%	13.60%
RE 2015-16	5700	217	34.07%	19.80%	31.40%	13.90%

Depreciation: continued….

- In 2015-16, IR will spend Rs. 7,300 crore from Depreciation Reserve Fund
- The provision for 2016-17 is Rs. 7,160 crore under DRF.
- Rs. 3,160 has been appropriated from internal resources and Rs. 4,000 crore will be realised through sale of scrap.

NON-FARE REVUENUES

- **Revamping parcel business**
  - **Liberalise the policy to enhance volumes, set up online portal for booking**
  - **Open the sector to container operators**
- **Advertising – Target to increase revenues by almost 4 times**
  - **Study to assess the pan Indian potential to set up a neutral benchmark for potential advertisers**
  - **First batch of stations to be tendered out by June**
  - **Branding of stations and trains being actively considered**
- **Monetising data/software/other assets**
  - **Actively looking at various opportunities: Data monetization through web service, FM radio in trains, IPR monetisation**
- **Monetising land**
  - **Cabinet note to utilize land near tracks for horticulture in final stages**
  - **Land utilization for building specialized warehouses to be explored**
- **Exports**
  - **Target to reach Rs 4000 crore by 2020 through exports of Machinery & Plant**

REDUCTION IN WORKING EXPENSES

- Diesel fuel expenditure
- Expected expenditure on diesel in 2015-16 - Rs. 16394 crore
- Budget estimates 2016-17 projected at Rs. 14464 crore, considering constant diesel prices
- Strategy for reduction of Rs. 1930 crore:
- buying crude through import and booking refining capacity in the existing Indian refineries to process that crude.
  - would lead to tax savings of the order of 20%. However, implementation would happen gradually, hence, savings of only 10% amounting to Rs. 1643 crore are expected in 2016-17.
- Savings of Rs. 287 crore are planned to be achieved through other measures such as:
- *reduce idling of locomotives.*
- *large scale condemnation of overaged fuel inefficient locos.*
- *undertaking maximum fuelling from cheaper locations.*
- *Use of bio diesel for blending to the tune of 5%.*
- *Other measures include reduction of departmental inventory.*

Focus areas in Other Coaching Earnings

Item	B.E. 2016-17	Growth Target over 2015-16
Other Coaching	Rs 6184.80 cr	41.7%

Major Items	2013-14	2014-15	2015-16 RE	2016-17 BE
Parcel	Rs 1,780 cr	Rs 1960 cr	Rs 2149 cr	Rs 3055.97 cr
Luggage	Rs 95 cr	Rs 104 cr	Rs 117 cr	Rs 144.69 cr
Post Office Mails	Rs 180 cr	Rs 170 cr	Rs 207 cr	Rs 217.11cr
Penalties, fines, parcel demurrage, platform-tickets etc.	Rs 1,353 cr	Rs 1764cr	Rs 1853 cr	Rs 2767 cr

New Initiatives in Budgeting on IR

Point of concern 1: Excess Expenditure

-Working towards "Nil" excess: 2014-15 fewer zones reported excess under certain grants.

-Constitutional position mandates no spending more than what has been granted under the Appropriation Act.

-P.A.C. takes harsh view of the excess especially when Supplementary Grant is obtained

-Remarks of the P.A.C. scathing including fixing of responsibility. : fix responsibility through APAR & refer to DoPT.

-Therefore instructions to all zones on control over expenditure within Grants/SL

Point of Concern 2

- Incidences of Items under Objection increasing
- Course correction in 2015-16 i.e: Delegation of powers for sanctioning the revised cost of work
- Appropriate budgeting
- Pink Book now reflects Sanctioned Cost. Rlys required to revise prior to sending for re-appropriation.

Point of Concern 3: Availing of Supplementary

- SDG taken and amounts not spent
- Out of turn work moved through SDG and not executed immediately or later dropped from Pink Book
- Estimation of Charged Appropriation in correctly estimated leading to insufficient SDG being obtained.

Point of Concern 4: blocking of Capital

- Only around 40% of rail supplies are utilised in track renewals
- Impacts inventory levels and avoidable blocking of funds
- Therefore Rails procured be linked to Track Renewal done in km

Linking Inventory to the Final Head outlays

- Since 2014-15, this has been effected.
- Production Units outturn of Rolling Stock & budget requirements are now inter-related.
- ZR's workshop & fuel budgeting is linked to their final head outlays (PU 27,34, 35,63, 64,60)
- Entire Rolling Stock Budget is linked now to transfer price & quantity; PU's to freeze Transfer Price for the entire f.y

Budget VPN

- Assists in accurate forecasting: linking of all units to a central server through VPN courtesy Railtel & their regional Centres.
- Secured through password/permissions granted by Board. Open round-the-clock.
- Inputs solicited post submission of Accounts and various fields frozen: reduces year-end data collection.
- Extensive training & workshops held with all .
- RE inputs sought early for distribution by December.
- RE Pink Book introduced with work-wise allotments.
- Inputs from ZR's used for framing the estimates at RE & FM stage

Budget VPN

- Final supplementary obtained from Parliament on these inputs (*when Supplementary can be taken)*
- Initially only RE solicited which will form base for BE.
- Pension data to be carefully reviewed & trend analysis done.
- All the cleanliness activities are to be booked under Demand No.8 Sub-head 590, except station sanitation which would continue to be shown under Demand No.9, Sub-head 290.

New Modules on the VPN

- Re-appropriation: modified outlays now immediately visible with correction in the database
- **ALL** reappropriations to be effected only through this module.
- Exchequer : Receipt of request & dispatch of orders speedened.

Facilitating processes

- Reappropriation orders clubbed and powers delegated to Rs. 2.5 crore; full powers for LAW Book items ; ZR's powers upto Rs.2.5 crore for Reappropriation between itemized Pink Book items & Lumpsum provisions;
- Request that the proforma appended to Board's letter number 2011-B-174 dated 3.7.2015 be strictly adhered to.
- Reverse Reappropriation
- Post-facto approval sought for higher expenditure already incurred through Reappropriations

Facilitating processes

- Re-vamping of Budget Call letter
- Shared Budget folder for dissemination of issues, policy, instructions etc.
- Comprehensive Economy Instructions

Recurring savings of paper

- Previously, Pink Book was one consolidated document for all zones.
- Consumed more than 12 lakh sheets of paper approximately
- In Budget 2015-16, Zone-wise Pink Book introduced.
- Recurring savings of more than 1.4 million pages

Redefining relationship with MoF

- Intention to redefine methodology of dividend computation and bring in more reliefs

CURRENT LIABILITIES ABOSRBED BY IR AND LIKELY CONCERNS

- Konkan Rail Corporation Ltd
- KMRCL
- IRFC debt; incremental debt on account of augmented borrowing in the fututre
- Impact of 7th Pay Commission
- Requirement for DRF, DF; Operating Losses on Uneconomic Branch Lines.

ISSUES

- Ring Fencing of GBS by MoF
- Higher GBS translates into higher Dividend, paid in perpetuity
- Debt Servicing of EBR(IF)
- No scope of squeezing costs; subsidies a living reality

Contd …

- Rate of dividend for 2014-15 and 2015-16
- All National Projects and Projects of National Importance including identified strategic and border area projects be declared dividend free or eligible for subsidy relief on dividend liability and further that Dedicated Freight Corridors to be considered at par with new lines for relief in dividend payment.

Valedictory session of the workshop on "new financial initiatives in ir"

At NAIR/BRC ON
18/5/2016

Performance in 2015-16

Description	BE	Actual	Shortfall
Originating Loading in Million Tons	1186	1101	-85
Originating Passengers in Millions	8601	8151	-450
Earning in Rs.Crores			
a) Frieght earning in Rs.Crores	121000	109000	-12000
b) Passenger earning in Rs. Crore	50000	44000	-6000
OWE in Rs.Crore	119000	107000	-12000
OR in Percentage	88.5	90.6	+2.1

Performance in 2016-17

Description	BE	APRIL 2016 BP	April 2016 Aproximate	Shortfall
Originating Loading in Million Tons	1157 (1186)	97	86	-11
Originating Passengers in Millions	8182 (8601)	677	656	-21
Earning in Rs.Crores a) Frieght earning in Rs.Crores	117000 (121000)	9800	8500	-1300
a) Passenger earning in Rs. Crore	51000 (50000)	4310	3720	-590
OWE in Rs.Crore	123560 (119000)	15394	15889	+495

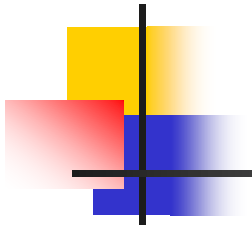
Figures in brackets indicate BE of 2015-16

Scheme	Value in Rupees Crores	Completion date
DFC	85000	2019-2020
AOT (Marhora and Madhevpura)	40000	2019-2020
EBR-IF	150000	2020-2055
High speed Rail	98000	2026
IRFC Rolling Stock	120000	7-8 years
Total	493000	

- Note: Plus an annual additional burden of about Rs.30000 per year due to 7th Pay Commission.

Recent Policy Initiatives

- Port congestion charges @10% has been withdrawn
- Dual Price Policy for iron ore (domestic/export) has been withdrawn(now only one rate)
- Busy season surcharge has been withdrawn now till June 16
- Introduction of 2 point loading to BCN stock of wagons
- Parcel Policy has been simplified
  - Committed rate for 5 years for SLR/Parcel trains
- Rationalized refund rules—Passenger business
- Introduction of Suvida trains—dynamic Pricing
- Upward revision of Tatkal rates.



Thank you