



“Coal Swapping” A Potential Way to Rationalize Rake Transportation and Swap Benefits of “Cost Reduction” & “Increased Availability”

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Rail Movement in India

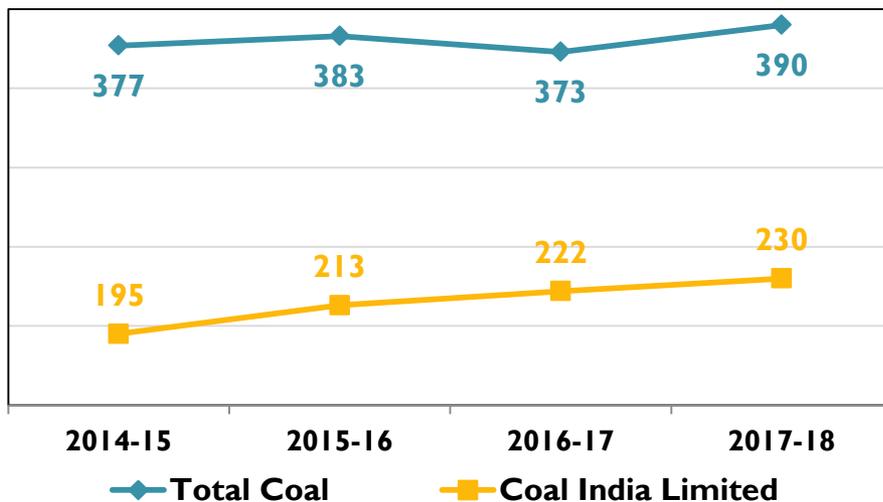


- Total Raw Coal Supplies in India was 842 Million tonne (MOC'2017)
- Of which 533 Mt was transported through Railways
- The volume of coal carried by IR was 48% of its total freight
- This accounted for 45% of its total freight Revenue
- In FY17 (October month), the average distance covered by Indian Railways to move coal was by 508 km
- Railways has moved 455 rakes/day in 2018 as compared with 380 rakes/day in previous year; Out of 455 rakes, CIL loaded 310 rakes
- Despite this effort, CIL has to clear a huge backlog of Rakes (SECL has 3400 & MCL has 1200 rakes backlog)
- There is lot of unnecessary movement and criss-cross flow which can be curbed by way of Rationalization of Linkages & Swapping

Rail Movement of Coal, Revenue & its Share

Ever increasing share of CIL

Coal Loading Indian Railways (Rakes/Day)



Freight Revenue: In FY18, revenue from coal stood at over Rs9,471 crore (\$1.37 billion), more than double the Rs4,297 crore Indian Railways earned from passenger operations. In FY17, coal's extra freight charge increased the cost of power by about 10 paise/kW on average. **For far-off power plants, this increase is 3 times higher, necessitating urgent steps to rationalise movement or resort to coal swapping routes.**

CIL- Modes of Transport

Railways (including Rail-cum-Sea)	55%
Road	26%
MGR	17%
Belt Conveyors/Ropeways	2%

CIL-Subsidiary wise action plan 2018-19

Subsidiary	Coal Stock as on 01.04.18	Plan 2018-19 (MT)			Actual Offtake in 2017-18	Percentage Growth in Offtake	Expected Stock As on 31.03.2019
		Production	Lifting from Stock	Total Offtake			
ECL	2.50	50.50	0.50	51.00	43.62	17%	2.00
BCCL	5.49	42.40	2.10	44.50	33.37	33%	3.40
CCL	13.41	76.35	8.65	85.00	67.56	26%	4.80
NCL	3.48	100.00	0.50	100.50	96.74	4%	3.00
WCL	11.61	52.50	7.20	59.70	48.75	22%	4.40
SECL	7.95	167.00	3.50	170.50	151.10	13%	4.40
MCL	11.17	162.50	6.50	169.00	138.27	22%	4.70
NEC	0.07	1.00	0.00	1.00	0.90	11%	0.07
CIL	55.68	652.25	28.95	681.20	580.31	17%	26.77

N.B.: CIL target include FSA Qty for long distant transport. Missing targets will result into more imports.

Genesis of Coal Swapping & Need for Linkage Rationalization:

- ❑ Earlier FSAs were granted based on the recommendations of Standing Linkage Committee (Long Term) and these recommendations were based on the coal availability scenario, location of the plant, mode of transport, etc.

[In US, South Africa & Australia, the Coal Based Power Stations are mostly around Coalfields; e.g. Powder River Basin which supplies about 400Mt of thermal coal to nearby power stations by Rail Network thus avoiding criss-cross movement]

- ❑ About 78000 MW capacity were linked in such a way, but in many cases the FSAs were granted from distant mines which has resulted into criss-cross movement.
- ❑ Alone from MCL, about 38 Million tonne of coal is moving to distantly placed plants by rail-cum-sea and all rail routes. 
- ❑ Few coastal based plants are receiving coal from CIL subsidiaries
- ❑ In 2015, MOC has brought a Coal Swapping & Linkage Rationalisation Policy only for PSUs restricted for Power Sector only and a comprehensive study was conducted by KPMG
- ❑ Due to increase in coal demand in the country and reduced growth of CIL production, it has become highly imperative to evolve ideas to make coal swapping a success so that enough coal is available in the hinterland for the starved coal based plants
- ❑ Wherever necessary imported coal may be made available for coastal based plants thereby removing their dependence on CIL coal.
- ❑ The efforts will also result into drastic reduction of imported coal moving in the hinterlands

- ❑ With the recently constituted Task Force on Coal Swapping, we are hopeful that new policy, under their guidance, will be of immense help to the industry to increase coal availability and reduction of transport cost.
- ❑ The New Policy will address all Sectors **viz. Power and Power, Power and Non Regulated Sector (NRS), NRS and NRS, PSU and Private, PSU and PSU, Private and Private sector as well as between domestic and imported coal.**
- ❑ As per the study carried out by ICRA Limited, for every 100 kms reduction in distance for transportation of coal, the landed cost of coal is estimated to decline by 5-8 paise per 1000 Kcal.
- ❑ With swapping of coal using imported coal, plants located on coasts which were earlier receiving FSA coal from far-off coalfields at 75% materialisation (in fact @65% materialisation due to prevalent grade slippages), can receive 100% coal at 85% Capacity Utilisation
- ❑ For road mode transportation, the biggest benefit, apart from transport cost saving, would be the drastic reduction in road traffic & congestion and would be a welcome move from environmental point of view
- ❑ It was estimated by KPMG that Total Savings in terms of transportation cost is likely to be in the range of Rs 4,500-6,000 Cr annually and Average transportation distance will reduce from 597Kms to 416Kms. There is a sharp fall in the number of TPPs getting coal from distances greater than 750Kms.

Major Achievements:

- ❖ CIL has rationalized sources of coal supplies to thermal plants of PSUs to the tune of 30.46 Million tonne
- ❖ This has resulted into Annual Savings of 3354 crore (As per Minister's Statement given in the Parliament)
- ❖ An Inter-Ministerial Task Force was constituted comprising of members from concerned Ministries which recommended 19 power stations for linkage Rationalization
- ❖ An agreement was signed between Gujarat State Electricity Corporation (GSECL) and NTPC for swapping of 1 MT of domestic coal with imported coal
- ❖ It has also been decided that power plants located within 40 km from pit-head shall construct MGR (merry-go-round) within three years (up to April 1, 2021) and those within 20km shall transport coal by Cross Country Pipe Conveyors

Present Policy:

- ❑ Ministry of Coal has constituted a IMTF with a Scope of Work covering all Sectors. The earlier Policy was restricted only for Power Sector. As per OM dated 18.10.2018, possibility of rationalization of coal linkages and coal swapping between TPPs using imported coal needs to be examined, across all sectors power/NRS, public/private, etc with a view to take care of the transportation/evacuation constraints, and to save on the transportation cost.
- ❑ Scheme for rationalization/ swapping of coal linkages shall be allowed across all categories of coal consumers (power/non-power) and plants using imported coal.
- ❑ This exercise is aimed at reducing transportation distance and so the necessary savings shall be on the account of savings in transportation costs which shall be passed on appropriately as discussed further.
- ❑ Coal India Limited (CIL) may be the nodal agency for conducting the process of rationalization/ swapping of coal.
- ❑ An Electronic platform shall be created to invite interests & process the applications in a time bound manner

Present Policy....continued

Proposed Modalities:

- The methodology may entail bilateral arrangements only i.e. requests made by willing parties for swapping/ rationalization of full/ part of their eligible quantities.
- Rationalisation/ swapping shall be a voluntary exercise.
- Consumers off-taking coal through rail, road or any other mode may be allowed.
- Under this scheme, there would merely be a transfer of coal quantity and existing contracts would continue to remain with the original parties.
- Detailed commercial terms to be finalized between the consumer and the coal company.

Tenure:

- Minimum tenure of swapping/ rationalization arrangement shall be 6 months.
 - Maximum tenure in case of swapping/ rationalization shall be as under: –
 - ✓ In the event of swapping/ rationalization between the two linkage holders, maximum tenure shall be minimum of the remaining tenures of the FSAs of the linkage holders.
 - ✓ In the event of swapping/ rationalization between a linkage holder and plant consuming imported coal, maximum tenure shall be the remaining tenure of FSA of the linked consumers or the continuation of import whichever is earlier.
- In the event of extension of the tenure of the FSAs of both the participants/ consumers, the swapping/ rationalization arrangement may continue till the tenure of FSA which is maturing earlier.

Allowed Quantity for Swapping

Before Rationalisation	
Player A (IPP)	Player B (Steel Plant)
EUP : Krishnapatnam (5km from Port)	EUP :Angul (250 km)
Linkage Source: Talcher, MCL	Supply Source : Imported
ACQ : 4.5 MTPA G-12 (3850 KCal/Kg)	Quantity : 1 MTPA RB3 (4200 KCal/Kg)
Mode : Rail-cum-Sea	Mode: Sea-cum-Rail
Energy Equivalent (GCal) : 17325	Energy Equivalent (GCal) : 4200 (Minimum)

After Rationalisation	
Player A (IPP)	Player B (Steel Plant)
EUP : Krishnapatnam	EUP :Angul
Supply Source: Talcher, MCL	Supply Source : Talcher, MCL
Quantity: 3.4 MTPA G-12 (3850 KCal/Kg)	Quantity : 1.1 MTPA G-12 (3850 KCal/Kg)
Mode : Rail-cum-Sea	Mode: Road
Supply Source: Imported	
Quantity : 0.9 MTPA RB3 (4200 KCal/Kg)	
Mode : Sea	
<i>Bills to be raised by MCL for 4.5 MTPA G-12 ACQ</i>	<i>Imported Coal to be provided by Player B</i>

Computation of Savings:

- ❑ The Savings shall be solely on account of savings in transportation costs.
 - Transportation Cost Savings due to reduced transportation distance.
 - Transportation Cost Savings due to supply of lower quantity of better quality coal.
 - Both these factors may additive as well as diminutive.
- ❑ Savings accruing to the power consumers due to the swapping/rationalization arrangement shall be passed on to the end consumers in the form of adjustment in power tariff; the necessary steps to be taken by the power regulator.
- ❑ Savings accruing to the non-regulated sector under the proposed policy shall be passed on to the Indian Railways.
- ❑ Computation of the savings shall be the joint responsibility of willing participants which will be submitted to the committee for scrutiny of its veracity.
- ❑ Responsibility of ensuring transfer of saving to DISCOMs and/or Railways shall rest with the applicants and monitored by regulators/Ministry of Railways, as the case may be.
- ❑ Supplementary Agreement • There shall be a supplementary agreement (which shall be annexed to the original FSA) entailing the modus operandi of the swapping/rationalization arrangement.

Savings: Illustration

Rationalised/Swapped Quantity- 1.4* MTPA		
	Player A (IPP)	Player B (Steel Plant)
EUP	Krishnapatnam	Angul
Supply Source	Imported	Talcher, MCL
Quantity (MTPA)	1.4*	1.4*
Mode	Sea	Road
Railway Network Decongested	Talcher-Paradip	Paradip-Angul
Reduction in Rakes/day	1	1
Total Reduction in Rakes/day	2	
Savings in Freight (Rs Cr/Year)	98.84	98.84
Total Savings (Rs Cr/Year)	197.68	

*Assuming one rake per day with 3850tonne & considering constant prices for domestic & imported coal

Major Concerns:

- ✓ **Multi-grade Supplies:** Different mines have different declared grades. Similarly, for a period of one year, actual grades supplied to the plant may differ from the declared grades which are decided through Third Party Sampling. In case of swapping between two EUPs having linkages/FSAs, it is imperative to form a basis for calculating the swapped quantities otherwise there will be dispute over the swapped quantities in case the actual grades as determined by Third Party Sampling Agencies are not considered. What will happen if any party with FSA has not opted for Third Party Sampling or the mine has not been provided with 'Enabling Conditions' ??
- ✓ Swapping is not allowed in case of Linkage Auction Coal for Non-Regulated Sector and Shakti B(ii) Scheme for Power Sector as there document does not contain the enabling clause : Necessary Amendments may be made in the Scheme Document
- ✓ In case of FSA for Power Sector, coal supplies are effected from any mine of signing Subsidiary whereas for NRS Linkages, mines are fixed at the time of Linkage Auctions. How the benefit shall be calculated when there is a case of swapping between these two??
- ✓ How will the benefit be calculated if one Party has Rail mode despatch and other has Road mode.??
- ✓ In IPPs (Power), generally there is a shortfall in ACQ and power plants receive about 65% of coal due to coal shortages, lower grades, poor rake availability, etc. Whether in case of import option when full coal at higher PLF is provided to the coastal power plant, full coal as per FSA ACQ Qty including the import option shall be delivered to the plant (another IPP) near to the coal source?



Thank You..

Backup Slides



LIST of PORT BASED POWER PLANTS DRAWING COAL FROM MCL							
Plants within 30kms from Port							
Company	Port	Distance	Talcher Area	IB Valley Area	Basundhra Area	Total	MTPA
Thermal Powertech corporation India Ltd. (Gayatri)	Krishnapatnam	11	96901	43223		1,40,124	1.68
NTPC, Simhadri	Vishakhapatnam	30	345910	251088	17112	6,14,110	7.37
NTECL, Vallur - NTPC Tamil Nadu Energy	Ennore	11	183223	43516	31055	2,57,794	3.09
NLC- Tamil Nadu Power Ltd.	Tuticorin	6	87532			87,532	1.05
TANGEDCO	Ennore	11	105937			1,05,937	1.27
TNEB (Tuticorin)	Tuticorin	1	68453	173837	50241	2,92,531	3.51
TNEB (North Chennai)	Ennore	5	400742			4,00,742	4.81
Haldia Energy Ltd.	Haldia	25	53572	110876	56925	2,21,373	2.66
Rashtriya Ispat Nigam Ltd	Vishakhapatnam	15	4613	21112		25,725	0.31
APPDCL- Nellore	Krishnapatnam	12				3,20,000	3.84
	Total		1346883	643652	155333	24,65,868	29.59
Plants beyond 30kms from Port							
APGENCO (VIJAYAWADA)	Krishnapatnam	323	117563	207432	63840	3,88,835	4.67
APGENCO (RAYALSEEMA)	Krishnapatnam	239	105020	18295	10972	1,34,287	1.61
	Total		2,22,583	2,25,727	74,812	5,23,122	6.28