

GREEN SUPPLY CHAIN MANAGEMENT



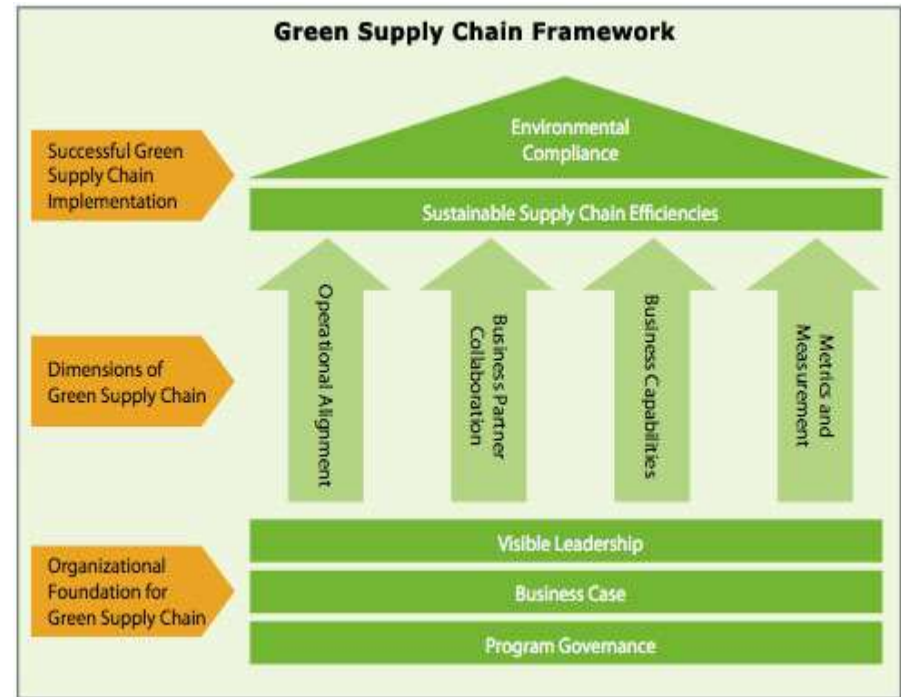
Amitava Baksi
Chief Procurement Officer
Tata Steel



What is Green Supply Chain Management



“Integrating environment thinking into supply chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers, and end-of-life management of the product after its useful life”

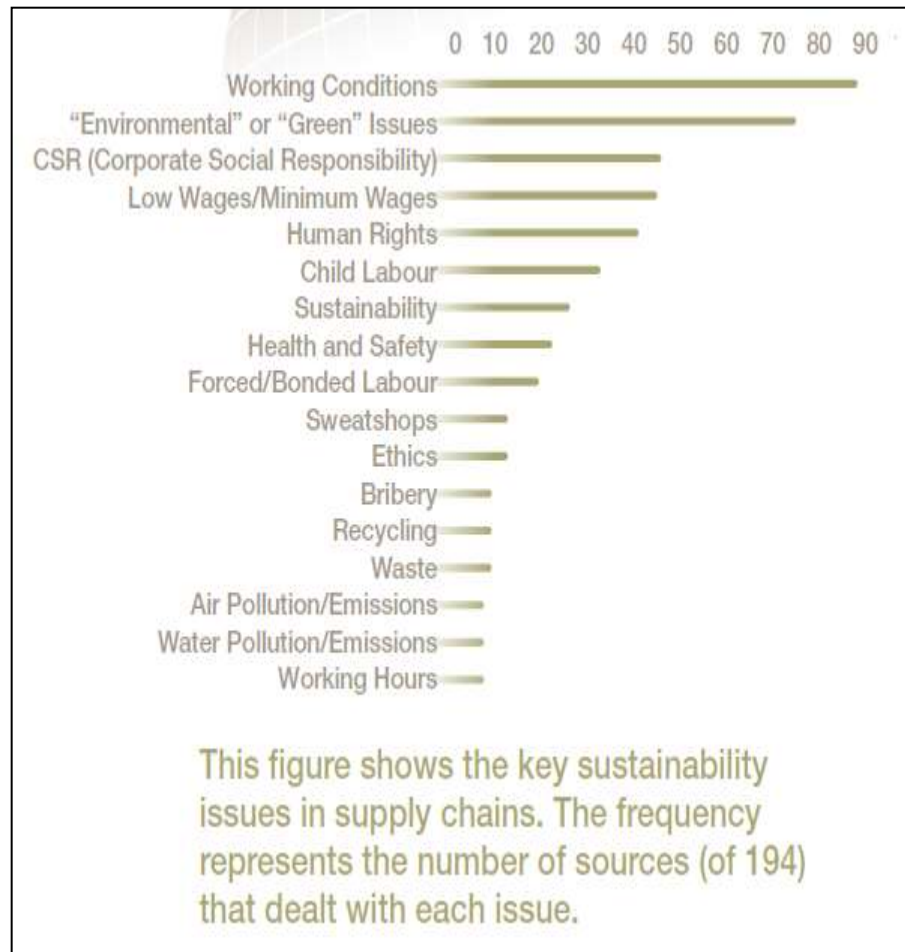
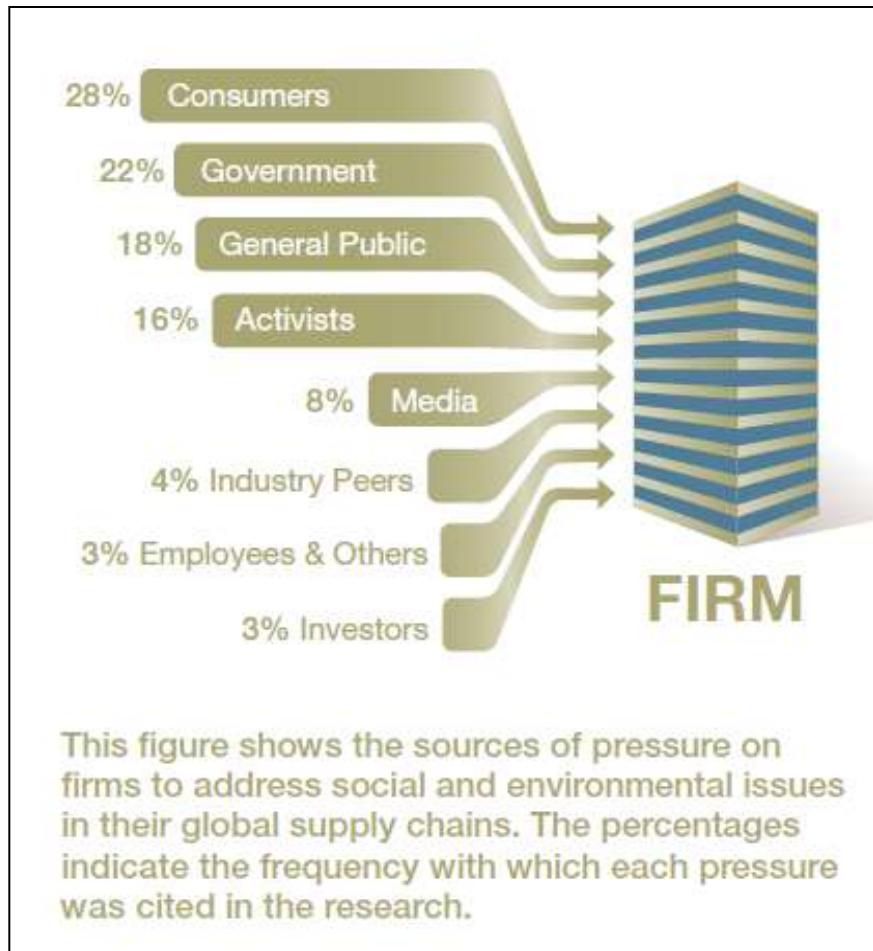


Why Adopt Green Supply Chain?



Factors pressuring organizations

Key sustainability issues



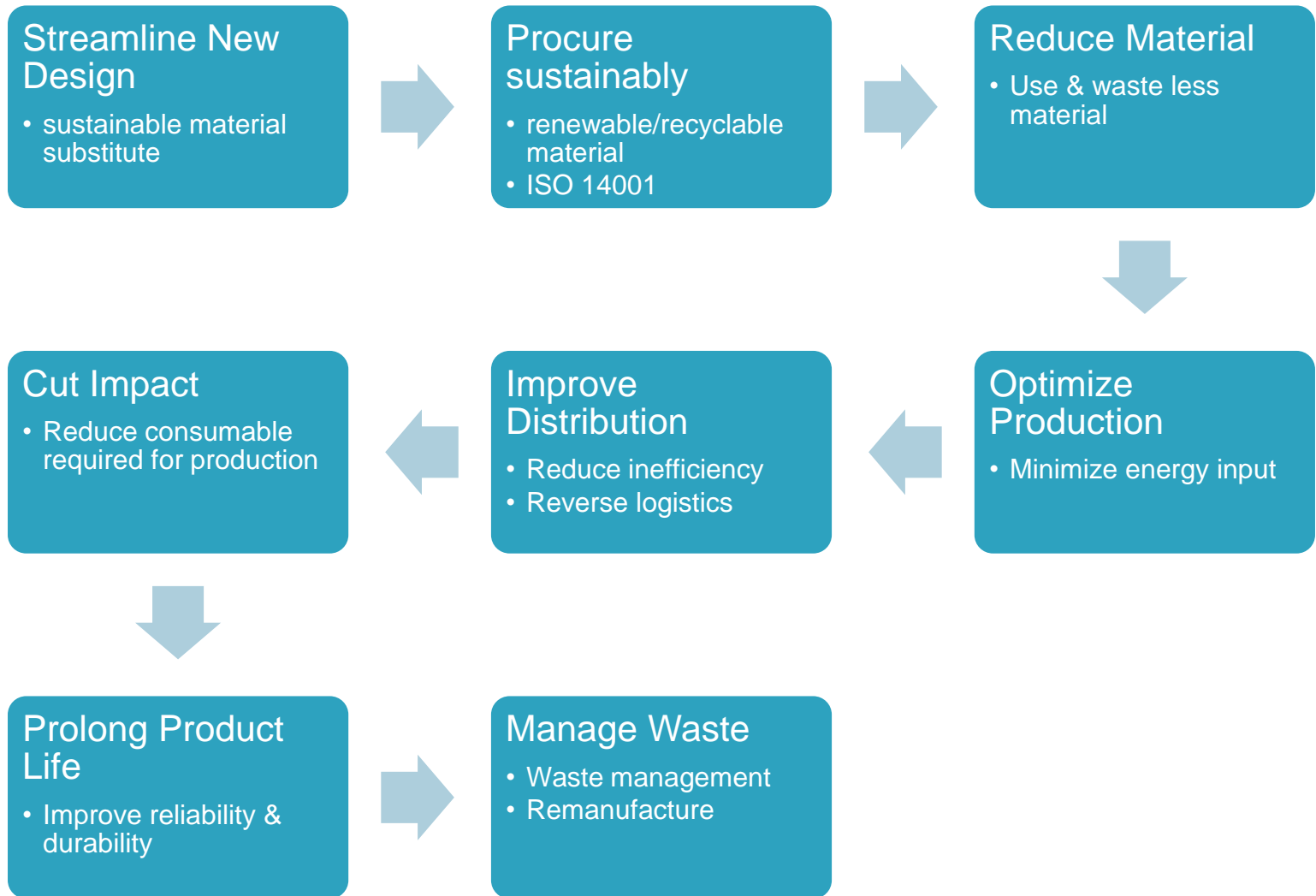
From compliance issue to value generating..



Green supply chain management (GSCM) = green design + green procurement+ green manufacturing+ green distribution+ reverse logistics

- Create or improve brand differentiation and customer loyalty
- Improve product, process, and supply quality and productivity
- Cost reduction by improving efficiency
- Product & process innovation
- Gain access to key markets through ISO 14001 registration or other certifications
- Takes off social pressure & manages compliance

Typical green supply chain roadmap



Green Procurement



Goods and services are considered green when they have a **lesser or reduced impact on human health and the environment** than competing goods or services that serve the same purpose.

Green Procurement also termed as “Sustainable purchases” contribute to **resource conservation** (land, water, minerals, plants & animals), **promote renewable energy and material resources, cut down on waste, reduce pollution and greenhouse gas emissions and foster a fair, equitable, and profitable economy**

The product that might be cheapest at the point of purchase may not be when running and disposal costs are taken into consideration. A **whole life costing** has **now become a viable money saving strategy with the continual rise in energy, water and disposal prices.**

GREEN SUPPLY CHAIN MANAGEMENT AT TATA STEEL

What we buy.....



Limestone



Zinc



Refractory



IT



Scaffolding



Spare Parts



Air craft, Medicines,
Vegetables &
Animals etc



Mechanized
Cleaning



Coal



Transportation

1 Introduction

2 Responsible Procurement Policy

3 Green Supply Chain in Annual Business Plan

4 Execution of Green Supply Chain Initiative

5 Performance Review

6 Future Plan

Procurement Division manages spend of ~ Rs. 14,000 crores with 92 executives and has been consistently rated as best amongst its peer groups



- Spend base: ~ Rs.14,000 Crores
- Bottom line impact: Rs.250 Crores
- No. of Sourcing & Supply Chain professionals: 92
- Seventy One Strategic Supplier Partners who accounts for ~45% of buy value
- ~ 4900 “live” vendors; All Procure to Pay transactions on SAP platform
- Total no. of Purchase Orders : ~16,000
- Rs. 100 Crore worth of business awarded & 9 new vendors added under AA Category.
- 37 % of total buy covered under Quality Assurance in Procurement
- 67% total buy covered under sustainable sourcing

Awards & accolades



Corporate sourcing excellence award from Indian Institute of Materials Management (IIMM) in 2006



Tata Steel receives Jury's Special SAP ACE Award (Awards for Customer Excellence) 2008 , for its “Most Innovative Implementation of e-Procurement”



An assessment by global consulting firm, McKinsey, put Tata Steel’s Procurement function close to top quartile amongst global metal and mining companies, (in 2008 & 2010)



Tata Steel India Procurement Team identified as one of the “Top Five” Procurement organizations in the “Best Procurement Team” category by Procurement Leaders Network, a Europe (UK) based Think Tank Body (2010)



Tata Steel India has been adjudged winner in CSR category in the Procurement Leaders Awards, 2011

"Procurement Leaders Awards is a benchmark for Global Procurement Excellence given by the Procurement Leaders Forum.



Tata Steel, India short-listed in the CSR and Cross functional Collaboration categories in Procurement Leaders’ Awards-2013.

Over 300 entries were received from 140 different companies in 28 countries for this year’s annual Procurement Leaders Awards.

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The TATA Steel responsible procurement policy - 5 building blocks



Policy outlines the fair business practices by which Tata Steel conducts business and we expect our suppliers to adopt similar principles

Code of Conduct (CoC) for Vendors to deal with non-compliance to Tata Steel's Code of Conduct

Vendor Whistle Blowing Protection Policy to condemn any kind of discrimination, harassment, victimization or any other unfair practice being adopted against the Whistle Blowers.

We require suppliers to maintain effective policies, processes and procedures to manage their environmental impact

ISO 14001 or equivalent

We expect our suppliers to adopt management practices in respect of Health & Safety which provide a high level of safeguarding for their workers.

OHSAS 18001 or equivalent

We expect our suppliers to develop and implement policies and procedures to ensure all human rights in their business and to encourage their suppliers to do likewise.

SA 8000 standard

We expect our suppliers to contribute to the social, economic and institutional development of the communities in which they operate.

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Embedded in BO&S of Procurement Div. Tata Steel



Objectives	KPI (UoM)	Actual FY'13	Target FY'14	Strategies	KPI (UoM)	Actual FY'13	Target FY'14	Means	KPI (UoM)
Deploy Responsible Procurement policy	% Compliance to Plan	100%	100%	2.1 To develop entrepreneurial ability through Affirmative action	Increase in Business turnover of AA vendors (Rs Crores)	90	96	2.1.1 Increase in business of vendors having > 50% ownership from SC/ ST community	Business volume Rs crores for vendors having > 50% ownership from SC/ ST community
								2.1.2 Increase in business of vendors having > 75% employees from SC/ ST community	Business volume Rs crores for vendors having > 75% employees from SC/ ST community
								2.1.3 Introduce new vendors in AA	No. of vendors under Affirmative action
				2.2 To develop entrepreneurial ability through Local Buy	Increase in Business turnover of Local vendors (Rs Crores)	New	84	2.2.1 Increase in business of Local Vendors	Business volume of Local Vendors in RS. Cr
				2.3 Deployment of Green buy initiatives	No. of initiatives	9	16	2.3.1 Identify and implement green procurement initiatives	No. of initiatives
								2.3.2 Increase in % coverage under green buy by deploying Policy on green buy	As per plan
				2.4 Evaluate suppliers response covered under RPP	% Compliance to plan	New	100%	2.4.1 Capture issue from Suppliers covered under RPP	% response captured

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Towards Greener Supply Chain...



Nearer Source
to Works

Fuel efficient
transporation

Reduce
Reuse
Recycle

Eco
Manufacturing

Eco Packaging

Tree Plantation

Water
Harvesting

Energy
Efficient
Equipment

Natural
Resource
Conservation

Safe Disposal
Process

Renewable
Energy



**Sustainable KPI Setting
Launch**



**Idea Generation
Workshop-Green
Supply Chain**



**Supplier site Observation with PSTA
Experts-Resource Conservation**



**Supplier site Observation with PSTA
Experts- Efficient Utilization of Energy
and Material**

GYANARJAN “ Shop Floor Trg. Module”



Reuse of Used Bearing



Energy saving Electrode



Supplier Relationship Management

Knowledge Sharing Session by Supplier to TSL Executive



Dust Free Work Place



Water Conservation Technology Centre Visit



More than 30 Class Room and Shop Floor Learning Sessions Organized

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Reduce, Reuse and Recycle of CRM Discarded Rolls

An Innovative idea

Twin benefit: Economic and Environment



Value Creation from Used Roll through Enhancing Roll Life Cycle

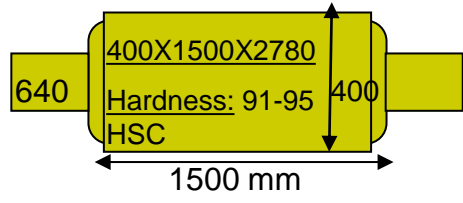
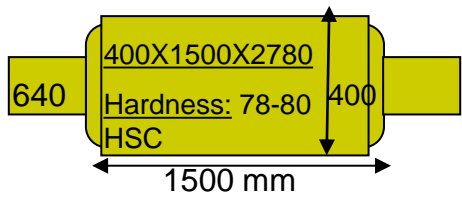
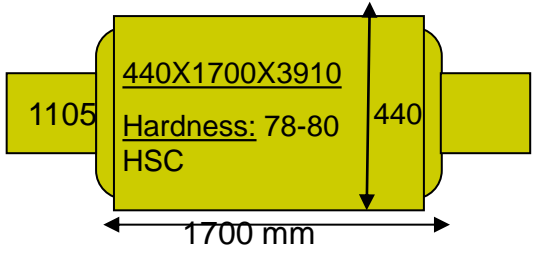


Example: CRCW Roll Making from CRM PLTCM IMR Used Roll

Transfer of used CRM PLTCM IMR Roll from secondary sales to M/s Tayo Rolls

Pre Machining for reducing diameter /barrel length at Tayo Rolls

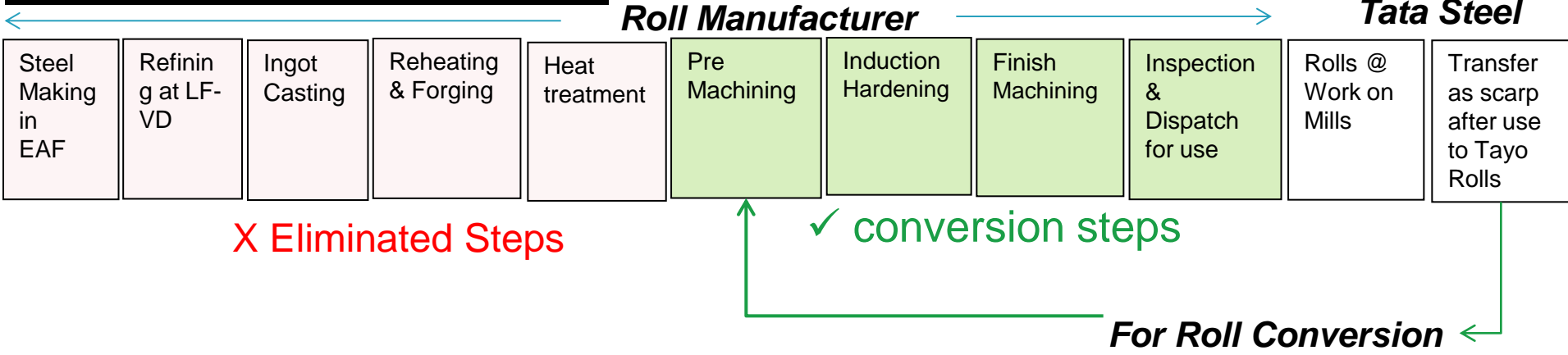
Induction Hardening
Final Machining
Inspection
Finally ready to Use



Conversion Process



Saved 80% energy consumption



- ✓ Reduction of C Footprint by 80-120 T per year
- ✓ Cost Saved Rs 200-250 per kg (Rs 5 Cr per annum for Tata Steel)
- ✓ Extra Revenue for Supplier Partner through Capacity Utilization



Eco friendly technology saves tree and improves production as well

An Innovative idea

Twin benefit: Economic and Environment



□ 100  per annum saved through migration from small packaging size (25 Kg made of paper) to bulk 1 Ton gunny bags



□ ~ 50% Reduction in Vessel Maintenance Time Through Cutting Edge Technology Results in Increase in Vessel Availability

Before



After



TATA STEEL Addition Production of 5 Heats Per Month (Rs 3 Crs per year)

Sustainable Purchasing of Aluminum Wires

*Triple benefits –on Economic, Social
as well as Environmental*



100 % quantity is shifted from west part of India to nearby sources to works



- ✓ **Reduction in transit distance by ~ 80%.**
- ✓ **Reduction in CO₂ emission from 123 Kg CO₂/Ton to 25 Kg CO₂/Ton.**
- ✓ **Reduction in Carbon Footprint by 411 MT CO₂/Annum**
- ✓ **Waste reduction by 56 MT Al wire /Annum**
- ✓ **Eco friendly Packaging saves wood by ~ 143 MT /Annum**
- ✓ **Business volume worth Rs. 24 Crores/Annum for Jharkhand based local supplier**
- ✓ **Inventory Carrying Cost reduction by Rs 15 Lakh/Annum**

Environment friendly mode of transportation

Twin benefit: Economic and Environment



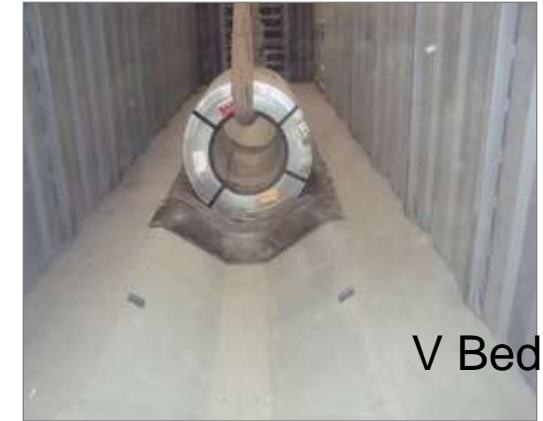
Transportation of Special Steel Material Through Containerized Rake



Covered Vehicle Road Transportation



Container Rail Movement



- ❑ Fuel efficient outbound logistics helps in reduction of CO2 emission
- ❑ Environment friendly unitization of CR/HR Coils due to use of *V-groove wagon bed instead of wooden saddle* and resulted in **saving of 85 trees per annum**
- ❑ Cost reduction compared to special covered vehicle road transportation of Rs. 1.3 Cr per annum

Eco Manufacturing Process

Twin benefit: Economic and Environment



Eco Friendly Pickling: 100% replacement of caustic acids by recyclable and reusable Steel Grits



- ✓ Unlike acid pickling, EPS pickling is safe and completely harmless to the environment
- ✓ Superior surface finish of Finish Goods

Eco Friendly Packaging of Conveyor Belt

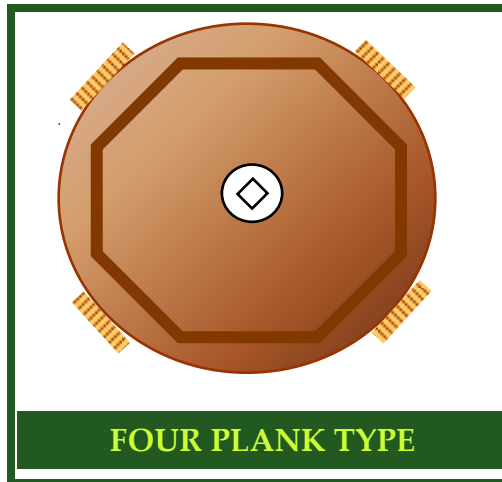
Twin benefit: Economic and Environment



Replacement of Wooden Crates by Canvas packaging



Before



After



- 15 Cu. Ft/Crate Wood savings

Examples of Responsible Procurement - Environment



Reuse	Refurbishment and reuse of used rolling rolls	<ul style="list-style-type: none"> ▪ Reduction in CO2 emission by 80-120 T per annum ▪ Reduction in roll cost by 60 %
Reduce	Retreading of OTR Tyres for HEMM application	<ul style="list-style-type: none"> ▪ 28T per annum reduction of CO2 emission ▪ Reduction in tyre costs about 25-30 percent
Water Conservation	Rain water harvesting in Limestone mines of Central India	<ul style="list-style-type: none"> ▪ Local community gets water for daily purpose
Tree Plantation	Tree Plantation in Limestone Mines of Central India	<ul style="list-style-type: none"> ▪ Plantation of about 50 trees annually
Reduce	Replacement of normal steel idlers with PU & ceramic lined idlers	<ul style="list-style-type: none"> ▪ Rs 30 Lakh ▪ Increase in life of IDLERS from 45-60 days to 15 months
Replacement of toxic elements	Replacement of Tata RAM M95 ramming mass by a chrome free RHI material	<ul style="list-style-type: none"> ▪ Removal of hexavalent chrome (Cr+6), which is soluble in water
Replacement of Hazardous material to environment	Eco-Friendly Pickling Process at FP EPA, M/s Hemnil Metals, Pune	<ul style="list-style-type: none"> ▪ TSL, first integrated steel mill in India to utilize this new technological process of Green Pickling

Awards and Recognition for Supplier during Annual Vendor Meet



Award Categories

- ✓ **Best vendor on Green Initiatives,**
- ✓ Best vendor for Delivery Compliance,
- ✓ Most Improvement oriented vendor,
- ✓ Best vendor on Quality,
- ✓ Exemplary display of Ethical behavior,
- ✓ Best vendor on SRM Implementation,
- ✓ Best Debut vendor



**Best Green Initiative Award
for Supplier-CMC Ltd.**



Best Vendor on SRM Implementation-Minteq

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Snapshot of Monthly Performance Review:



Business Objective-2: Deploy Responsible Procurement policy

	Strategies & Means for the Objective					Mar'14	
	Strategies	Means	KPI (UoM)	Target FY,'14	Responsibility	Plan	Actual
Environment	2.3 Deployment of Green buy initiatives	2.3.1 Identify and implement green procurement initiatives	No. of initiatives	16	Mr. Ashwini Kumar	0 (16)	0 (18)
		2.3.2 Increase in % coverage under green buy by deploying Policy on green buy	%	2%		(2%)	(3%)
	2.4 Evaluate suppliers response covered under RPP	2.4.1 Confirm following of Responsible Procurement policy of Tata Steel by identified vendors	No. of identified vendors	Grp A: 45 Grp B: 34	Sr. Mgr., Vendor Management	Gr A: 45 Gr B: 34	Gr A: 40 Gr B: 11



MD Tata Steel receives CII-ITC Sustainability Prize from Mr. Sachin Pilot

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Long Term Action Plan for Green Procurement



Strategies & Means	KPM (UoM)	FY13E	FY14	FY15	FY16	FY17	FY18	Proposed Owner
1.0 Strategy 1- Policy for TSI on Green Procurement w.r.t. Responsible Procurement Policy	Timeline	New	Policy Draft, Syndication & Approval				Review of Policy in FY19	CEM, Chief Procurement
2.0 Strategy 2- Development of concept & Manual for guidance	Timeline	New	Draft Manual Stakeholder consultation	Final Manual Release				CEM, Damini Upadhyay / Ashwini Gupta
3.0 Strategy 3- Vendor Evaluation & Registration following necessary revision	Milestone			Revision of related processes	Category wise rollout			VM
4.0 Strategy 4- Awareness & Capacity Building			Internal capacity building through participation in knowledge exchange platforms	Awareness program amongst vendor	Sustain	Sustain	Sustain	CEM, Chief Procurement
			Awareness program amongst vendor					

- **IT Systems in Supply Chain to track Vendor Performance related to sustainability and Inbound Logistics Carbon footprint**
- **Vendor Awareness/Learning Session on Responsible Supply Chain**
- **Enhancing % buy under sustainable sourcing**
- **100% coverage of ISO 14000, 18000, etc certified vendors**
- **VIU evaluation to consider the environmental aspect/carbon footprint of the material.**

A pair of hands is shown from a low angle, cupping a small, vibrant green seedling with several leaves and a small amount of dark soil. The background is a bright blue sky with scattered white clouds. The lighting is natural, suggesting an outdoor setting.

THANK YOU