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SUSTAINABLE PUBLIC PROCUREMENT ACTION PLAN FOR INDIAN RAILWAYS

Scoping Study / Policy Analysis / Action Plan / Implementation Guide

Dr. Prasad Modak, Walter Kahlenborn



Acknowledgement

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The European Union launched the SWITCH-Asia programme with a mission to support the transition of Asian countries to low-carbon, resource-efficient and circular economies while promoting sustainable consumption and production patterns within Asia and greener supply chains between Asia and Europe. The programme aims at providing a platform to promote sustainable consumption and production (SCP) policies and practices in Asia and enhance the awareness and dialogue of local stakeholders. The SWITCH-Asia SCP Facility aims at strengthening the implementation of SCP policies at the national level.

Aim of this publication

This Scoping Study lays the basis for all advisory and capacity building activities by the Senior Experts. It portrays the status on Sustainable Public Procurement (SPP) in India, gives an overview of the current SPP system and policies and outlines an Action Plan for further integrating SPP into the Indian Railways system.

Authors:

Scoping Study and Policy Analysis Paper: Dr. Prasad Modak, Walter Kahlenborn.

Action Plan and Implementation Guide: Dr. Prasad Modak, Sivaranjani Subramanian, Walter Kahlenborn, Kathrin Kohl.

Supervision and Coordination: Arab Hoballah and Cosima Stahr, SWITCH-Asia SCP Facility

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Background

This Action Plan and its preparatory and Implementation documents have been developed as part of the SWITCH-Asia SCP Facility's endeavour to strengthen the implementation of SCP policies at the national level in Asian countries. The Ministry of Railways, Government of India, requested technical assistance for translating policies into a plan of action for mainstreaming Sustainable Public Procurement (SPP), sustainable building and construction, water and waste management, in the Indian Railways (IR) system. In response to this request, a team of senior technical experts, Dr. Prasad Modak and Mr. Walter Kahlenborn, was commissioned with the development of the Action Plan and supporting documents.

As a first step of the assignment, the team developed a Scoping Study on Sustainable Public Procurement for IR and held a stakeholder consultation. Subsequently, an online Awareness Programme was organised, targeting both middle- and senior-level management engaged with procurement at IR. The programme aimed at strengthening capacities of IR's personnel and increasing awareness on SPP. The team then drafted the Policy Analysis Paper, providing an overview of SPP initiatives and experiences in India covering public and private as well as multinational organizations. Train the Trainer (ToT) sessions were also implemented, where vendors and NAIR staff were trained on SPP in four separate online sessions.

All outcomes of the above actions and documents developed, built a solid foundation for the Action Plan for SPP at Indian Railways and provide relevant input to it.

The Action Plan and Implementation Guide were presented to Indian Railways in June 2021. Prior to its implementation, a thorough review has to be conducted by IR and modifications might need to be undertaken accordingly, if needed.

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SECTION 1

SCOPING STUDY

Dr. Prasad Modak, Walter Kahlenborn



List of Abbreviations

ACASH	Association of Corporations & Apex Societies of Handlooms
BEE	Bureau of Energy Efficiency
BHEL	Bharat Heavy Electricals Limited
BIS	Bureau of Indian Standards
BSCI	Business Social Compliance Initiative
CE	Circular Economy
CFL	Compact fluorescent lamp
CII	Confederation of Indian Industry
CNG	Compressed natural gas
CO₂	Carbon Dioxide
COFMOW	Central Organisation for Modernisation of Workshops
COS	Controller of Stores
CPCB	Central Pollution Control Board
CR	Central Railways
CRB	Chairman, Railway Board
CSR	Corporate Social Responsibility
CVC	Central Vigilance Commission
DB	Deutsche Bahn AG
DEMU	Diesel multiple unit
DFPR	Delegation of Financial Powers Rules
DGS&D	Directorate General of Supplies & Disposals
DPC	Driving Power Car
DRDO	Defence Research and Development Organisation
ELTS	End-of-Life Tyres
EMAS	Eco-Management and Audit Scheme
EMU	Electric Multiple Unit
EU	European union
FICCI	Federation of Indian Chambers of Commerce & Industry
GDP	Gross Domestic Product
GFR	General Financial Rules
GHG	Green House Gas
GPP	Green Public Procurement
GRI	Global Reporting Initiative
IC/ICE	InterCity train/ InterCity Express train
IGBC	Indian Green building Council
IIT	Indian Institute of Technology

INDC	Intended Nationally Determined Contributions
INR	Indian Rupees
IRCTC	Indian Railway Catering and Tourism Corporation
IREPS	Indian Railways E-Procurement System
IRILMM	Indian Railway Institute of Logistic and Material Management
IROAF	Indian Railways Organization For Alternate Fuels
IRS	Indian Railway Service of Engineers
IRSS	Indian Railway Stores Service
ISO	International Organization for Standardization
KVIC	Khadi and Village Industries Commission
KW	Kilo Watt
LCA	Life Cycle Assessment
LCC	Life Cycle Costing
MSME	Ministry of Micro, Small and Medium Enterprises
NAIR	National Academy of Indian Railways
NEERI	National Environmental Engineering Research Institute
NREP	National Rural Employment Programme
NTPC	National Thermal Power Corporation Limited,
ÖBB	Austrian Federal Railways
PAC	Passenger Amenities Committee
PAGE	Partnership for Action on Green Economy
PCMM	Principal Chief Materials Manager
PSU	Public sector undertakings
R&D	Research and Development
RDSO	Research Design and Standards Organisation
RFID	Radio-frequency identification
SBB	Swiss Federal Railways
SNCF	Société nationale des chemins de fer Français
SPP	Sustainable Public Procurement
TGV	Train à grande vitesse (French high speed train)
UN	United Nations

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1. STATUS ON SUSTAINABLE PUBLIC PROCUREMENT (SPP) IN INDIA

Regulatory Framework of SPP in India

Public procurement accounts for a significant share of the GDP in countries all over the world. This share is estimated in the range of 15% to 40%¹, depending on economic characteristics. In India, public procurement as a percentage of GDP is estimated between 20% to 22%², indicating a more significant engagement by the government in providing goods, services, and works.

There is no central legislation exclusively governing public procurement in India. However, various procurement rules and policies are guided by central legislations such as the Contract Act 1872, Sale of Goods Act 1930, Prevention of Corruption Act 1988, Arbitration and Conciliation Act 1996, etc. 3 4

States like Tamil Nadu, Karnataka, Andhra Pradesh, Assam and Rajasthan have enacted state-specific legislation. The Tamil Nadu Transparency in Tenders Act, 1998, Karnataka Transparency in Public Procurement Act, 1999, the Rajasthan Transparency in Public Procurement Act, 2012, etc., govern the procedure for procurement in the respective States.

However, none of these legislations introduce environmental performance as criteria in public procurement.

Evolution

Sustainable Public Procurement (SPP) in India began with the introduction of EcoMark in 1991, a certification mark issued by the Bureau of Indian Standards (BIS) to promote products conforming to a set of standards aimed at the least impact on the ecosystem⁵.

In 2006, the National Environmental policy encouraged companies to consider environmental aspects for the purchase of goods by applying ISO 14000 in their procurement process. Later, in 2006 the Prime Minister's council of Climate change constituted an Expert Group to adopt Low carbon strategies for products and services.

By 2008, a few public sector entities and government departments started internalizing energy efficiency criteria in the procurement process aligning with Bureau of Energy Efficiency's (BEE) initiatives of the star rating system.

A multi-stakeholder consultation was conducted in 2008 on Green Procurement & Purchasing (GPP). In 2011, the Ministry of Environment and Forests (MoEF) constituted a core group to draft guidelines

1 Hazarika, B., & Jena, P. R. (2017) *Public Procurement in India: Assessment of Institutional Mechanism, Challenges and Reforms*, 7 (204), pp 3. India: National Institute of Public Finance and Policy. Retrieved from https://www.nipfp.org.in/media/medialibrary/2017/07/WP_2017_204.pdf

2 Ministry of Finance FM Reviews Capital Expenditure & Payments of Maharatnas and Navratnas CPSEs- Retrieved from <https://pib.gov.in/PressReleasePage.aspx?PRID=1586546>, accessed 4th June 2020

3 CUTS International (2014). *Public Procurement: Need for a National Policy in India*. Jaipur, India: CUTS International.

4 Tabish, S.Z.S. & Jha, K.N. (2011). *Analyses and Evaluation of Irregularities in Public Procurement in India*. *Construction Management and Economics*, 29(3), pp 261-274

5 Operation of Eco-mark Scheme- <https://bis.gov.in/index.php/product-certification/operation-of-eco-mark-scheme/-/3>

for GPP. This group consisted of Bureau of Indian Standard, Central Pollution Control Board, Industries associations, Indian Green building council, and other ministries.

A product-based approach focusing on key environmental issues and building on existing policy instruments was adopted. The group recommended legislation and an institutional arrangement to encourage the central government to procure more green products and services.

The MoEF mandated CII to develop green procurement guidelines and build capacity for formulating, implementing and enforcing GPP at the national and state levels.

A year later, the Government of India introduced the Draft Public Procurement Bill-2012, which proposed the environmental characteristics of a product as an evaluation criterion for procurement. This bill was however not passed.

An Expert Group on "Low Carbon Strategies for Inclusive Growth" was set up by the Planning Commission in 2011 to suggest low carbon pathways consistent with inclusive growth. The group made contributions to the Twelfth Five Year Plan and presented an interim report that provided a menu of options for India to reduce its emission intensity by 20-25% over 2005 levels by the year 2020. This Final Report submitted in 2014 provided a detailed and longer-term assessment of these options and the macro-economic and welfare implications of the low carbon strategy that included preference to purchasing of low carbon goods and services.

In 2014, India joined the 10 Year Framework of Programmes on Sustainable Consumption and Production (10YFP), a global commitment to accelerate the shift towards sustainable consumption and production.

India committed its Nationally Determined Contribution (NDC) to the Paris agreement in 2015 to improve the emissions intensity of its Gross Domestic Product (GDP) by 33-35% by 2030 below 2005 levels. According to the Climate Action Tracker, it can achieve its goals set forward by the NDC if the legislation put forward in its support is fully implemented.⁶ Inter alia, India has pledged to increase the share of non-fossil fuels-based electricity to 40% by 2030. Indian Railways was a lead signatory to India's NDC by committing to reduce 20% of freshwater consumption by 2030 and to reduce carbon emission by 32% over the base year 2005 by improving rail traction energy & fuel efficiency.

General Financial Rules (GFR) revised and released in 2017 has provisions that purchasing authorities can include environmental criteria while making procurement; this has also been emphasized in the procurement manuals issued by the Ministry of Finance (MoF). While GFR has provisions for environmental criteria, there are challenges in terms of implementation and its remit remains restricted to certain products.

In 2018, a Task Force on Sustainable Public Procurement was created by the Department of Expenditure, to review international best practices in SPP, and recommend an initial set of product/service categories (along with their specifications) where SPP could be implemented. All central Indian government ministries, departments, and central public-sector undertakings will be subject to the recommendations of the task force.

NITI Aayog in 2019 pitched for a transition to Resource Efficiency and Circular Economy as an Economic Paradigm for New India. A Status Paper and Way Forward on Resource Efficiency & Circular Economy and four Sectoral Strategy Papers on Resource Efficiency on Steel, Aluminum, Construction & Demolition Waste, Secondary Materials Management in Electrical & Electronics Sector was released.

⁶ See *Climate Action Tracker* website: <https://climateactiontracker.org/countries/india/>

The Status Paper emphasized the need for SPP as a cross-cutting policy instrument to promote Resource efficiency and circular economy in India.

Late 2019, the Ministry of Environment, Forest and Climate Change (MoEFCC) drafted India's first National Resource Efficiency Policy (NREP). The NREP aims to make industries resource-efficient and also remediate pollution of air, land, and water. The draft outlines the procurement of products with lower environmental footprints such as secondary raw materials and locally sourced materials.

Figure 1 summarizes the above initiatives in the form of a timeline.

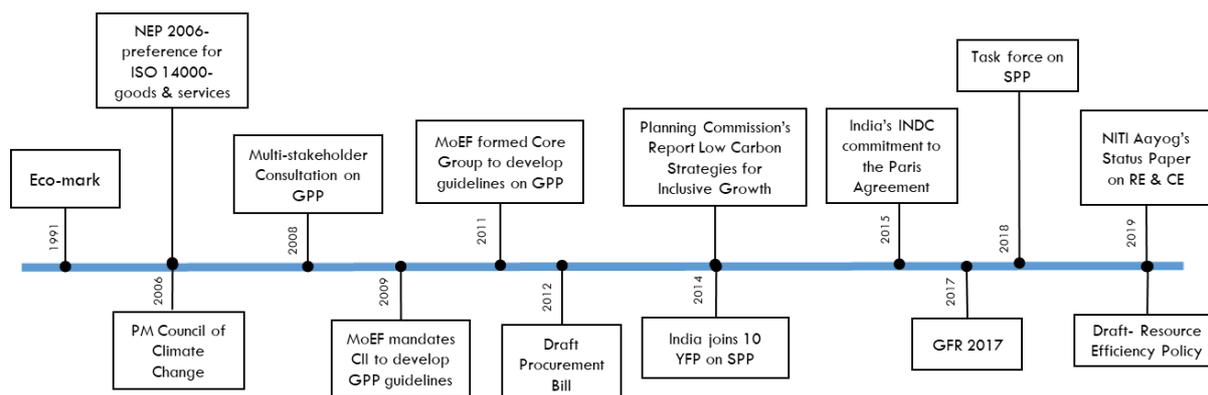


Figure 1: Timeline of SPP initiatives in India

Administrative Guidelines

In the absence of a comprehensive law, General Financial Rules (GFR) issued by the Ministry of Finance are followed by various government departments and public entities at the central and local level as a set of guiding regulatory principles for public procurement.

GFR were issued for the first time in 1947, bringing together in one place all existing orders and instructions pertaining to financial matters. These have subsequently been modified and issued as GFR 1963 and GFR 2005.

The latest GFR were issued in 2017. As per the currently applicable GFR, the fundamental principles of public buying are for enhancing efficiency, economies, transparency and promotion of competition in public procurement (Rule 137). All government purchases must strictly adhere to the principles outlined in the GFR, which include specific rules on procurement of goods and services and contract management.

Following provisions in the GFR facilitate the procurement of sustainable products by public sector⁷

- Rule 173 (xi) Criteria for determining the responsiveness of bids should consider elements such as performance/efficiency/environmental characteristics;
- Rule 136 (iii) While designing the projects, principles of Life Cycle cost may also be considered

⁷ General Financial Rules- 2017 Government of India, Ministry of Finance, Department of Expenditure- https://doe.gov.in/sites/default/files/GFR2017_0.pdf

- Rule 173(xvii) Ministries or departments while procuring electrical appliances shall ensure they carry the notified threshold or higher Star Rating of BEE

In addition, the Manual for Procurement of Goods, 2017 (MPG) contains guidelines for the purchase of goods and addresses energy, environment and compliance related expectations. The Delegation of Financial Powers Rules, 1978 (DFPR) delegates the government's financial powers to various ministries and subordinate authorities. The guidelines allow specifications for the acquisition of Environmental friendly products through the use of ISO 14020 or voluntary environmental standards (as per clause 2.2 Technical specifications ix).

Task Force on SPP

The Department of Expenditure (DoE), Ministry of Finance Office, constituted a Task Force on Sustainable Public Procurement (SPP) in 2018 to finalize the procedure for public procurement⁸.

The Sustainable Procurement Task Force members include joint secretaries, directors-general, or other representatives from the following entities: Confederation of Indian Industry (CII), Department of Expenditure, Ministry of Finance, Ministry of Environment, Forest and Climate Change (MoEFCC), Ministry of Railways (MoR), Bureau of Indian Standards, Bureau of Energy Efficiency, Dedicated Freight Corridor Corporation of India, and the Public Procurement Division (MoF 2018).

The Task Force recommended seven product categories, including public works (brick, steel, and cement), electrical appliances, information technology (computers & peripherals, photocopiers, telecom), pharmaceuticals (bulk drugs), paper, office furniture, and lighting. These products categories were chosen based on their environmental impact (from production, use, or disposal), volumes in use, and their significant share of public spending.

⁸ Office Memorandum- Task force on SPP
<https://doe.gov.in/sites/default/files/Task%20Force%20on%20Sustainable%20Public%20Procurement.pdf>,
accessed 7th June 2020

2. OVERVIEW OF THE PRESENT PROCUREMENT SYSTEM IN INDIAN RAILWAYS

Indian Railways (IR) is a state-owned public utility of the Government of India under the Ministry of Railways and headed by the Minister of Railways. The management of the IR is led by the Chairman, Railway Board (CRB). Members of the Railway Board include the Financial Commissioner, Member Traffic, Member Engineering, Member Rolling Stock, Member Traction, Member Staff, Member Material Management, and Member Signal & Telecom, who represent their respective functional domains. (Refer to Figure 2).

For administrative purposes, IR is divided into 17 zones, each headed by a General Manager. The GMs manage rail operations within each zone, and have powers to sanction certain projects up to a certain amount. Zonal Railways are further divided into smaller operating units called Divisions. There are 68 Operating Divisions in IR at present, each under a Divisional Railway Manager.

In addition, several Production Units look at the manufacturing of coaches, locomotives, and wheels. There are Training Establishments and Public Sector Enterprises which manage various ancillary activities such as catering, ticketing, developing land, and managing the dedicated freight corridors.

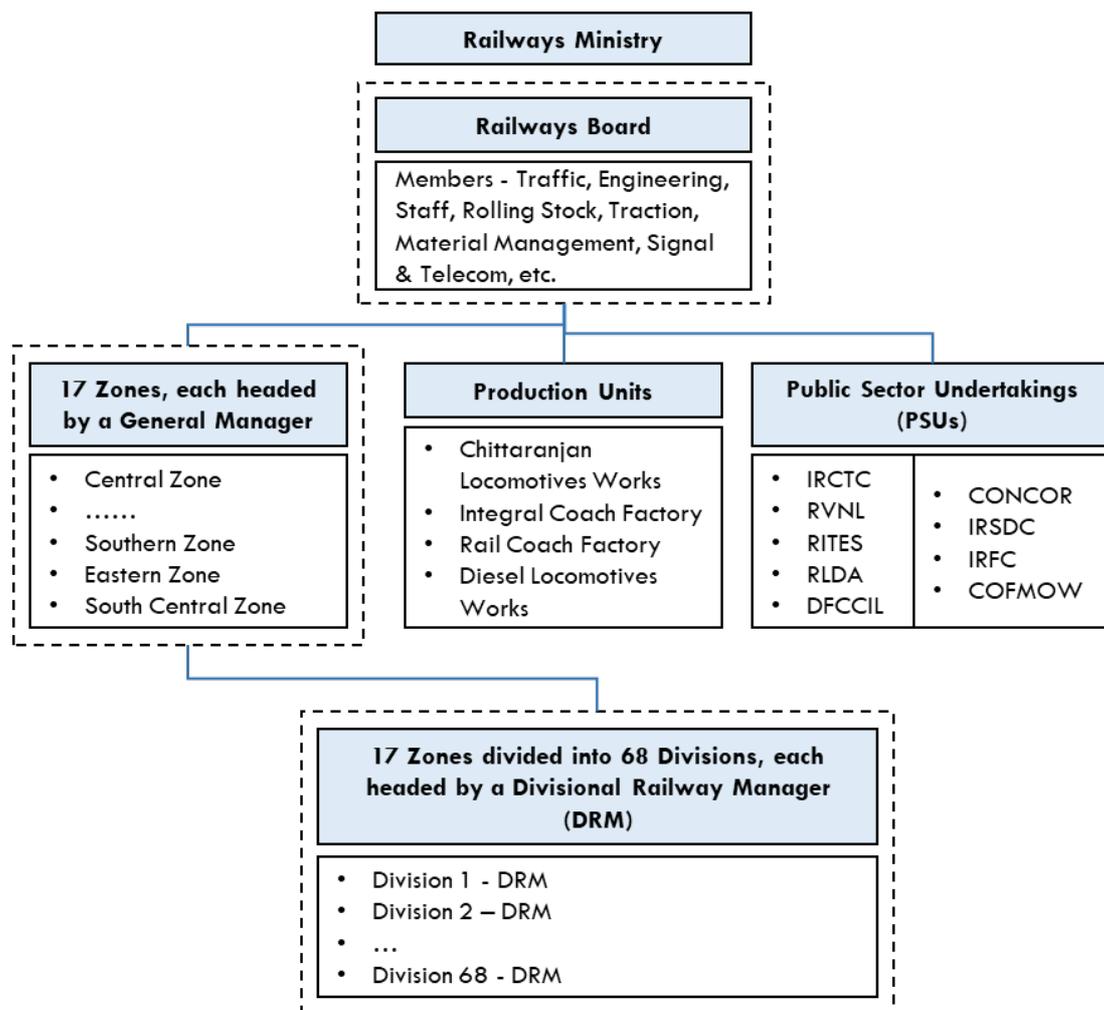


Figure 2: Institutional setup of Indian Railways

The Union Cabinet approved the organisation restructuring of Indian Railways in December 2019. The Railway Board will be reorganised based on functional lines⁹. The Railway Board will be composed of

- a chairman, who will act as the Chief Executive Officer.
- four members responsible for (i) infrastructure, (ii) operations & business development, (iii) rolling stock, and (iv) finance, respectively.

On a Zonal Railway setup, a General Manager is assisted by Additional General managers and heads of different departments such as Chief Engineer, Chief Operating Superintendent, Chief Commercial Superintendent, Chief Mechanical Engineer, Controller of Stores, etc.

Materials Management

In the Railway board, the Member-Materials Management deals with planning, organizing, communication, directing, and controlling of activities concerned with the flow of materials into IR and its further movement to various users and departments. An Additional Member (Railway Stores) is the head of Railway Stores Directorate. There are Executive Directors, Directors/Joint Directors and Deputy Directors in this Directorate. This is visualized in Figure 3.



Figure 3: Railway board for Materials Management

⁹ Cabinet approves restructuring of Railway Board, merging cadres -accessed 4th June 2020
<https://economictimes.indiatimes.com/news/economy/policy/cabinet-approves-restructuring-of-railway-board-merging-cadres/articleshow/72953393.cms?from=mdr>

The functions of Railway Stores Directorate are summarized below

- Policy Formulation: Frame and issue of policy guidelines to all Zonal Railways and production units on stores and purchase
- Inventory Control: Policies for efficient inventory management
- Centralized Purchase: High value purchase to ensure equitable distribution as per needs, where the purchase is beyond the approval limit of General Manager
- Liaison with other Ministries: Railways Liaison Officer designated for purchases coordinated through the Directorate General of Supplies and Disposals and other ministries
- Coordination for supply of steel: With steel plants in drawing Rolling programme and monitoring of supply of steel to various units.

2.1 Materials Management in Zonal Level Railways

At the Zonal Railways, the Material Management/Stores Department is at three levels - Headquarters level, Divisional level and Extra Divisional or District level in the form of Stores Depots and Printing Presses.

At the zonal levels, head of the department is the Principal Chief Materials Manager (PCMM). The PCMM is assisted by Chief Materials Managers (C.M.M.s), Dy. Chief Materials Managers, who are further assisted by the Senior Materials Managers (S.M.M.) and Assistant Materials Managers. The Figure 4 represents the materials management organization at the zonal and depot level.

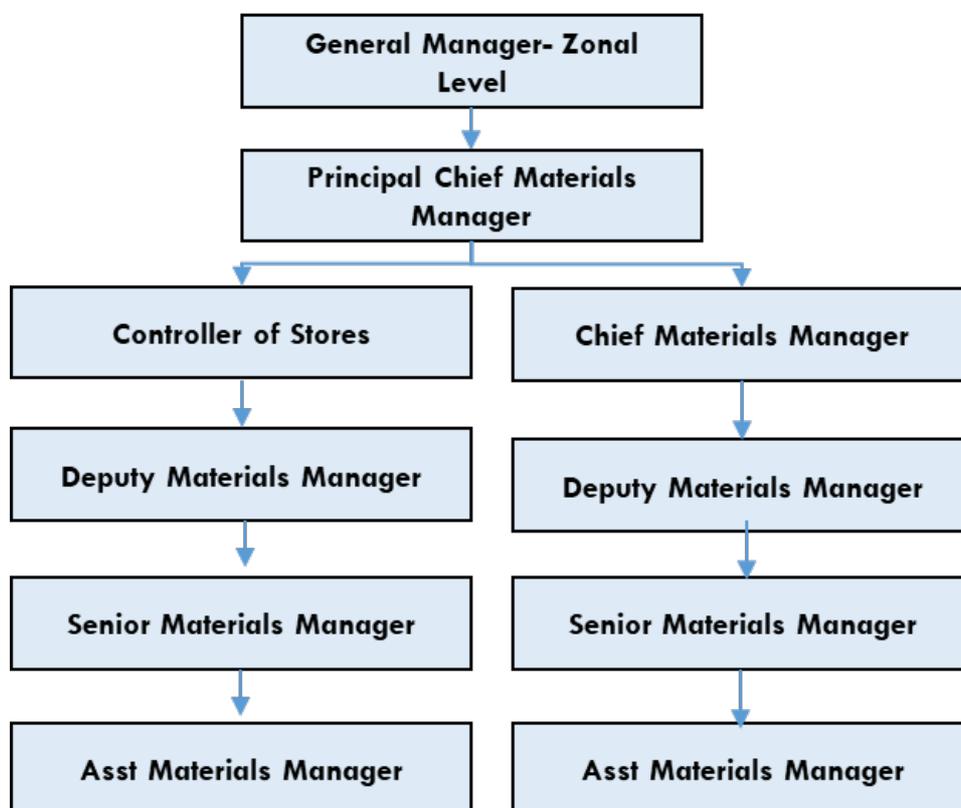


Figure 4: Materials Management Organization at the Zonal and Depot level

The entire activity of procurement, inspection, accounting, stocking, distribution of stores and disposal of surplus stores and scrap materials is looked after by the Stores Department. Items for the stores are procured for the maintenance of rolling stock (locomotives, coaches, EMU Coaches, and wagons) and infrastructure (track, signaling systems, building, etc.), operation of assets (lubricating oils, etc.) and repairs in workshops. Procurement of stores is done on-line through IREPS website: www.ireps.gov.in

The Head of Stores Department is the Controller of Stores who functions at the same level as other Heads of departments. The Stores department manages about 262 stock depots¹⁰ that feed into the repair workshops and maintenance sheds. A Depot Officer heads these depots.

The stocking depots form the basic unit of the materials management organization. Stock depots store items that are regularly required for repair, maintenance, operation and manufacturing activities and that need to be replenished at regular intervals

The stocking depots are responsible for inspection, receipt, storage and issue of the stock materials to the consuming departments. The procurement of the stock items is not carried out by the stocking depots. Instead, the stocking depots annually raise indents based on the rate of consumption and inventory position estimated to Controller of Stores, through online Material Management Information System (MMIS).

Other Agencies

All items for stores are purchased centrally, not through Zonal railways. Other agencies involved are listed below

- **Directorate General of Supplies & Disposals (DGS&D):** To get advantage of bulk quantity and standard rate contracts for common user goods the items which are used by all Government departments are generally purchased through DGS&D using the online Government e-marketplace. DGS&D is in a position of clubbing the requirements of all Government departments and therefore, purchase the items at much more economical prices.

The DGS&D also maintains long-term contracts with KVIC and ACASH for the reserved items of recurrent procurement items and lays down terms and conditions therein. With KVIC, IR's procurements have increased from 716 crores in 2005-2006 to 1834 crores in 2011-2012. IR relies on KVIC for its textile requirements

- **Indian Railways Stores Service (IRSS)** manages the procurement, logistics and transportation of materials
- **Railway Board:** Items of imports involving large sums of foreign exchanges and some critical items are arranged through Railway Board. These items are not manufactured in adequate quantities in the country.
- **Other Production Units:** Some items are centrally procured by some Railways or production units such as components of diesel locomotives & ICF coaches are procured through Diesel Locomotive Works -Varanasi and ICF Madras respectively.
- **Other Agencies:** Sleeper Pool Committee for purchasing sleepers, Government Medical Store, Central Organization for Modernization of Workshops (COFMOW) for machinery and plant items required for workshops modernization.

¹⁰ Indian Railways Year Book 2018 – 19- Railway Board, Ministry of Railways, Government of India- https://www.indianrailways.gov.in/railwayboard/uploads/directorate/stat_econ/Year_Book/Year%20Book%202018-19-English.pdf

- **Research Design & Standards Organization (RDSO)** engages in developing standards, technical investigations, testing and inspecting the items to be procured, and drafting the tender specifications. Currently, RDSO does not address environmental criteria.

Agencies involved in Procurement

Zonal Railways and railway production units mostly procure materials required by them in a decentralised system. However purchase of items which are centralised for procurement at Railway Board's level are procured through the Government e-marketplace portal hosted by DGS&D where common user goods and services can be procured.

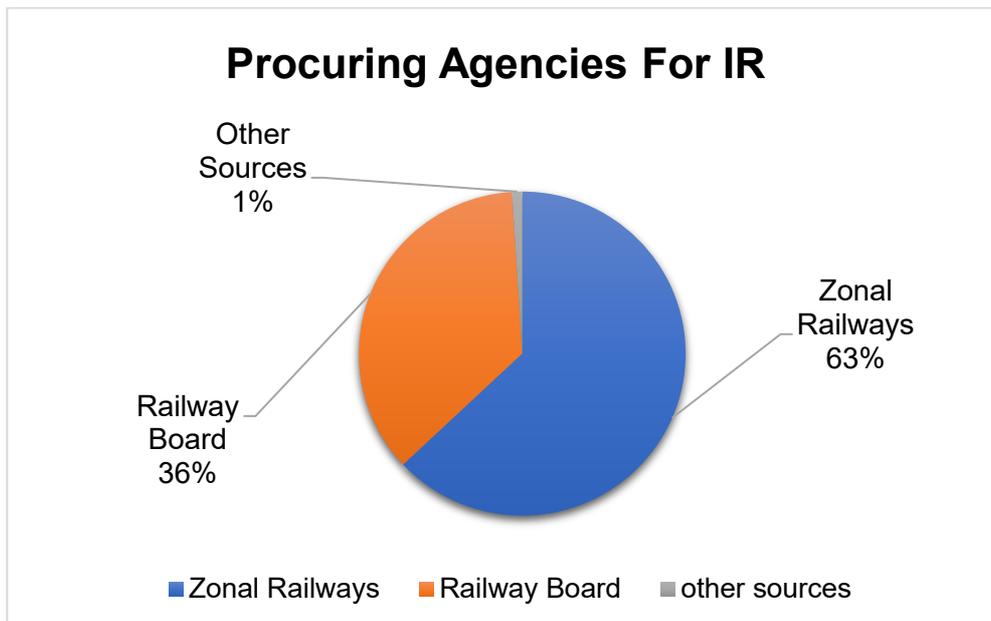


Figure 5: Procuring agencies for IR

Figure 5 denotes that out of INR 62,133.74 crore worth of stores procured in 2018-19, 63% was done by Zonal Railways and Production Units, 36% by Railway Board and the balance 1% through other sources.

Stores worth ~10% were bought from Small Scale Sector and Khadi and Village Industries in 2018-19. Public Sector Undertakings contributed 20% and other industries contributed 80% towards supplies.

Existing Procurement System

The public procurement in Indian Railways is governed by the Indian Railway Financial Code (1998), Indian Railway Code for the Accounts Department (1997), the Indian Railway Code for the Stores Department (1990), and Indian Railways Rolling Stock Code (2008).

2.2 General Financial Rules

Railway Board vide its letter No. 2017/ F(X)II/PW/R dated 9th February 2018 advised all concerned to refer the rules under the General Financial Rules, 2017 and use them as broad principles while making financial decisions. GFR 2017 are the guiding principle for Railways for the purpose of categorizing various modes of tenders, such as, Works, Goods, and Consultancy.

Manual for Procurement of Goods and Services¹¹ and Manual for Procurement of Consultancy and Other Services¹² were revised after a decade and issued in 2017 by the Department of Expenditure, Ministry of Finance within a month of the release of GFR 2017, which was followed by issue of Manual for Procurement of Works¹³ in 2019.

The Directorate General of Supplies and Disposals Manual on Procurement and the Central Vigilance Commission (CVC) Guidelines prescribe the procurement procedure to be followed by all central ministries.

2.3 Transparency & Digitization – Digital India

Digital transformation of Materials Management on Indian Railways started with roll out of e-procurement system in FY:2011-12 with limited scope of e-tendering. This has now extended to encompass the complete Materials Management cycle which includes demand generation, tendering, purchase decision, contracting, inspection, material receipt and payment.

All types of tenders for Goods, Services, Works, Earning/Leasing and sale of scrap are issued on a single web-portal i.e. www.ireps.gov.in. An Android app "IREPS" has been launched which enables access to useful information related to Railways procurement and disposal¹⁴.

2.4 Indigenous Vendor Development – Make in India

In 2017, the government issued the Public Procurement (Preference to Make in India) Order 2017, which grants purchase preference to local suppliers based on certain conditions to promote the manufacturing and production of goods and services in India.

Indian Railways has fully implemented Public Procurement (Preference to Make in India) Order. The value of Indigenous stores at INR 61,078.07 crore during 2018-19 constituted almost 98% of the total purchases by Indian Railways.

Indian Railway has to depend on imports for high technology components for its locomotives, coaches, signal and telecom equipment etc. which are not available in adequate quantity with required specifications within the country. Figure 6 provides the share of Indigenous purchase by IR.

11 Manual for Procurement of Goods (2017). Department of Expenditure, Ministry of Finance, Government of India. Retrieved from https://doe.gov.in/sites/default/files/Manual%20for%20Procurement%20of%20Goods%202017_0_0.pdf

12 Manual for Procurement of Consultancy & Other Services (2017). Department of Expenditure, Ministry of Finance, Government of India. Retrieved from https://doe.gov.in/sites/default/files/Manual%20for%20Procurement%20of%20Consultancy%20and%20Other%20Services%202017_0.pdf

13 Manual for Procurement of Works (2019). Department of Expenditure, Ministry of Finance, Government of India. Retrieved from <https://doe.gov.in/sites/default/files/Manual%20for%20Procurement%20of%20works%202019.pdf>

14 Indian Railways Year Book 2018 – 19- Railway Board, Ministry of Railways, Government of India- https://www.indianrailways.gov.in/railwayboard/uploads/directorate/stat_econ/Year_Book/Year%20Book%202018-19-English.pdf

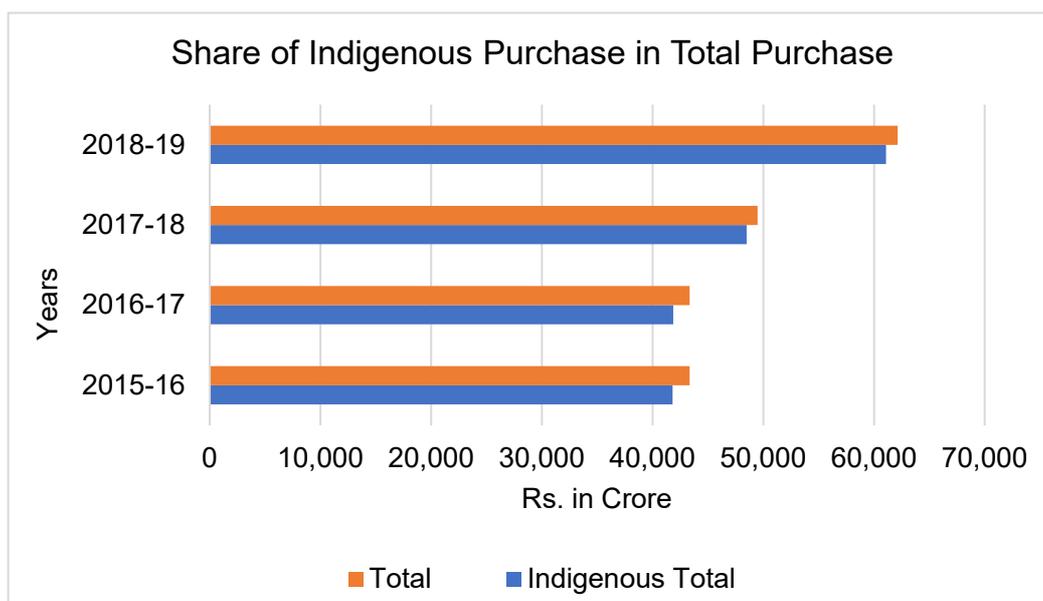


Figure 6: Share of Indigenous Purchase

In 2012, the Ministry of Micro, Small, and Medium Enterprises (MSME) passed an executive order stating that every central government ministry, department, and public sector unit (PSU) must procure a minimum of 20 percent of its goods and services from Micro and Small Enterprises (MSE). Although this order does not mandate GPP, it sets a precedent for preferential purchasing practices that could be similarly formulated to target environmentally preferable products.

2.5 Khadi and Village Industries Commission

The Railway Board in January 2019 instructed the Zonal General Managers that Linen items (Two Bed Sheets, Pillow Cover and Face Towel) were to be procured by KVIC and Association of Corporations and Apex Societies of Handlooms (ACASH). Stores worth INR 6,269.56 crore were bought from Khadi and Village Industries in 2018-19.

Also, instructions to use locally-produced, environment-savvy terracotta products manufactured by the KVIC like *kulhads*, glasses and plates for serving catering items like snacks and tea to the passengers at the Varanasi and Raebareilly railway stations were issued.

2.6 IRCTC

Indian Railway Catering and Tourism Corporation Limited (IRCTC), was incorporated in 1999 as an extended arm of the Indian Railways to upgrade, professionalize and manage the catering and hospitality services at stations, on trains and other locations and to promote domestic and international tourism. This is achieved through the development of budget hotels, special tour packages, information & commercial publicity and global reservation systems.

It may be thus observed that there are several agencies involved in IR's procurement with varying degrees of procurement, with GFR playing an important role.

3. THE SOURCING PROFILE

Classification of Stores

The items procured by the stores include the following:

- a. Raw material and equipment for Production, Operation, & maintenance of a large fleet of Rolling stock of all types.
- b. Rails, Track machines, and track fittings,
- c. Wheels, Axles. Rails, Track machines and track fittings,
- d. Steel, Cement
- e. Diesel, oil and lubricants, chemicals.
- f. Workshop plants, machines and tools.
- g. Rolling stock spares.
- h. Electrical, Signaling and Telecom equipments and spares.
- i. Staff welfare, healthcare and passenger amenity items.

Figure 7 provides a break-up of the expenditure on the procurement of different goods by Indian Railways. The spending on stores for the manufacture of rolling stock and purchase of complete units is the highest across the last five years.

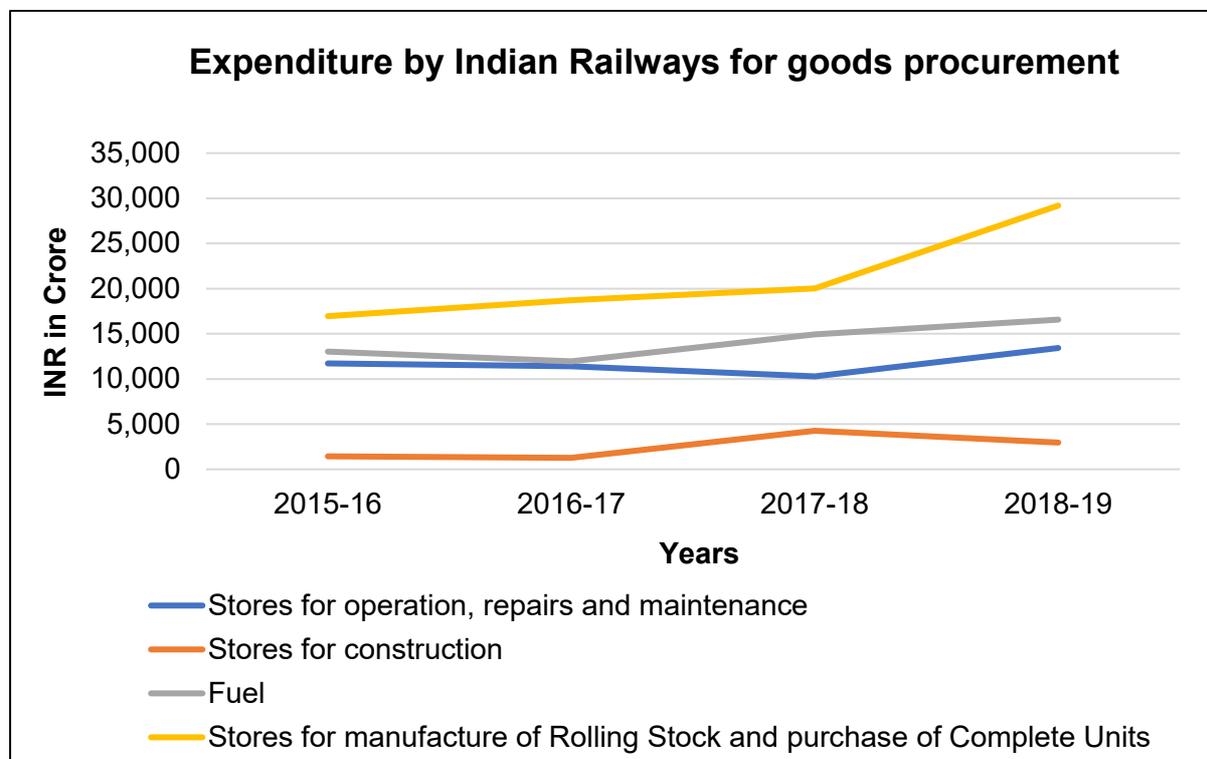


Figure 7: Expenditure by IN for goods procurement

Procurement Procedure

Indian Railways procurement process various activities via the e-procurement system running www.ireps.gov. The multiple stages of the procurement process are represented in the Figure 8 and described in the subsections below.

3.1 Raising of Indents & estimation of needs

All material procured is categorized as Stock and Non-Stock items.

- Stock items have a regular demand, consumption and recoupment.
- Non-stock items are required occasionally and not regularly.

For stock items an annual procurement system is followed. Stores generate an indent for stock items based on the consumption patterns of the previous years. The Controller of Stores (COS) has full authority to scrutinize every demand, to question the quality of items, and modify the quantities.

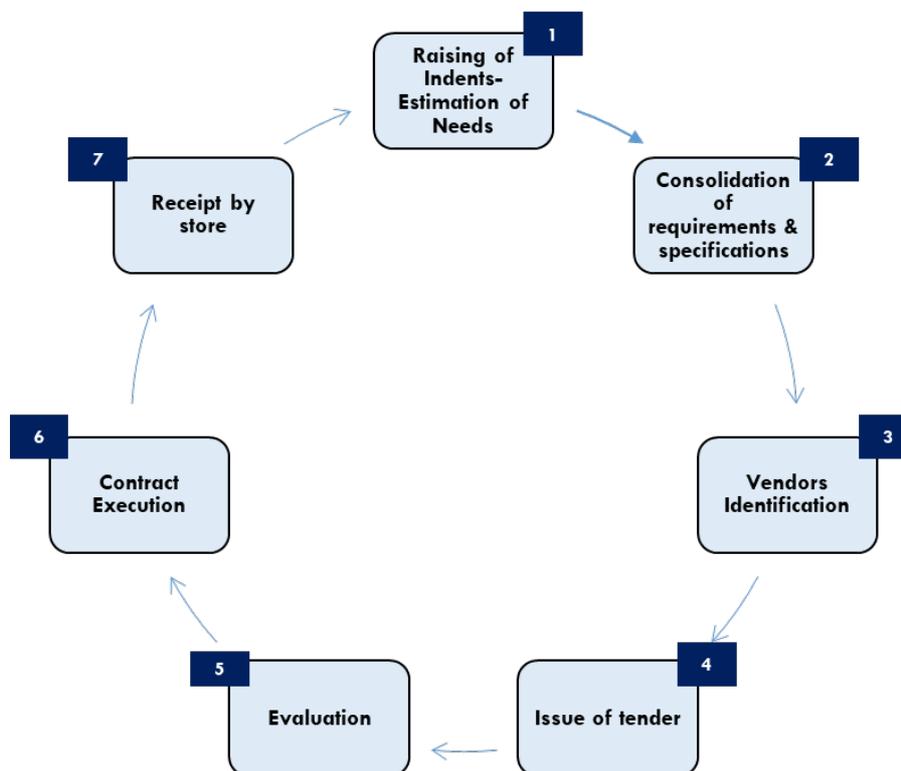


Figure 8: Procurement Procedure for Indian Railways

3.2 Consolidation of requirements & specifications

Items not arranged by the Railway Board and which are not required to be purchased through the Central Purchase Organisations are procured directly through the Controller of Stores (COS). The indents generated across all stores and production units are consolidated in the controller of stores office.

The Railway Board procures indents with items of Rolling Stock, fuel, fish plates, cast iron sleepers, wheels, tyres, axles, imported steel, certain nominated critical items like composite brake blocks, etc.

3.3 Vendor Identification

The significant share of procurement in railways is from approved vendors. Approval is performed by a centralized agency such as Research Design and Standard Organization (RDSO), Diesel Locomotive Works or Chittaranjan Loco Works etc.

While approving only technical and financial capability of the vendor is taken into considerations.

3.4 Issue of Tender

The COS arranges purchase through the issue of the following tenders

- Global tenders involving Foreign Exchange.
- Advertised Tender or Open Tender (Generally for items valuing over INR 10 lakhs).
- Limited Tender/ Bulletin tender to approved / registered vendors for demands of value up to INR 10 lakhs.
- Special limited tenders: if the value is more than 10 lakhs and it is desirable to go for limited Tender due to vital or safety nature of item or urgency subject to finance concurrence and competent authority's sanction.
- Single Tender if there is only one source of supply (PAC - Proprietary Article Certificate) or if the item is of minimal value

3.5 Evaluation

A tender committee consisting of 3 officers - one from Stores Department, one from the department requiring the item, and one from Accounts Department is formed. The Tender Committee is a recommending body; its recommendations may/may not be accepted by the COS.

The following points are considered while finalizing a tender

- The offer should be technically suitable, i.e., the material offered by the firm should be precisely as per the specification given in the tender enquiry.
- Out of all technically suitable offers, the lowest offer is examined for the feasibility of rates.
- If the rate of the lowest technically suitable offer is considered feasible, terms and location of delivery are verified.
- Background verification on the firm and its previous records is conducted.

Vendors selected are required to arrange an inspection of all consignments from 3rd party inspecting agencies like Rail India Technical and Economic Services Ltd or RDSO before dispatch of material.

3.6 Contract Execution

A purchase order is issued to the awardee, and a contract is executed. The terms of the contract are as per the "Indian Railways standard (IRS) Conditions of Contract". The supplier will dispatch the material at the said time of delivery to the store, raising the indent directly.

3.7 Receipt by store

The consignee stocking depot on receipt of the supplies will carry out inspection of material before acceptance and if everything is as per the prescribed specification will intimate the Controller of Stores (COS) office and accounts personnel designated to make payment.

Details of date of supply, quantities received, rejected or accepted quantities will be sent to the COS.

Indian Railways Accounts department maintains oversight on procurement issues through financial scrutiny of all procurement proposals, participation in the tender process and payment.

4. SPP POLICIES AT IR AND EXISTING GREEN INITIATIVES

A workshop on GPP was conducted at the Indian Railways Institute for Logistics and Materials Management (IRILMM) in 2010 to introduce the concept of GPP. Subsequently, a barrier analyses was conducted between 2010-2012 to understand the challenges that would be faced in implementation of GPP.

IR set up the Environment Directorate in the Railway Board in January 2015 to coordinate all environment management initiatives across the Indian Railways. The Vision and Mission of this directorate is given in Box 1.

Vision

To promote Green environment and clean energy while making the Indian Railways a global leader in sustainable mass transport solutions

Mission

- *To promote energy conservation measures.*
- *To maximize the use of alternate forms of clean energy, thereby minimizing the carbon footprint of Railways.*
- *To provide clean and hygienic environment to customers.*
- *To promote conservation of water and other natural resources.*
- *To march towards Zero waste discharge from the major Railway units.*
- *To promote Green built-up spaces and expand tree-cover.*
- *Building in house capacity to set up an effective Environment Management System.*

Box 1: Indian Railways Environment Directorate - Vision & Mission

Following the setting up of Vision and Mission, IR has taken steps to streamline its initiatives in Environmental management with interventions in Energy Efficiency, Renewable and Alternate sources of Energy, Water Conservation, Afforestation, Waste Management and Green Certifications.

Indian Railways established a new committee in 2017 to draft sustainable procurement guidelines for Indian Railways in view of the new Manual for Procurement of Goods, 2017, the committee is yet to come up with its draft guidelines.

Currently, there is no SPP policy at IR. However, there are some directions suggested by GFR 2017, which are followed by IR. Despite no direct mandate to procure sustainable products, IR has gone ahead and integrated environmental and social concerns in procurement decisions aligning with their mission. The following sections describe these initiatives.

Energy

Indian Railways consumes over 20 billion kWh¹⁵ of electricity annually, comprising around 2% of the country's total power consumption. IR has taken a series of measures to cut down its energy consumption and rationalize its energy procurement process by implementing several energy conservation measures, procurement of power under Open Access and harnessing Renewable Energy.

4.1 Phasing out incandescent lamps by CFLs and 100% LED Lighting

Initially, phasing out of the incandescent lamps by *Compact Fluorescent Lamps* (CFLs) was undertaken in the interest of energy efficiency. Box 2 describes the phase out effort.

Indian Railways undertook a unique initiative in 2008 to reduce peak lighting loads in its residential quarters by replacing incandescent lamps with energy-efficient CFLs. The project team used life-cycle costing to demonstrate the potential benefits of using CFLs over incandescent bulbs. This project saw the replacement of 1.4 Million I.C.L.s with CFLs even though the up-front purchase price of a CFL in India at that time was approximately five or six times greater than that of an incandescent light.

Box 2: Indian Railways CFL initiative

Currently, all railway installations, including stations, offices, maintenance depots and other buildings have been fitted with 100% LED luminaries. 64% of residential quarters have been provided with LED as a one-time provision.

100% LED installations in Railway Stations will reduce about 10% of total energy being utilized, thus leading to savings of about 240 million kWh units of electricity¹⁶ i.e. savings of Rs 180 Cr. per annum.

4.2 Renewable Energy

IR has installed 82.42 MW Solar and 53 MW Wind power across Railway installations. IR has set a target to meet at least 10% of its energy requirement through renewable energy.

As a part of this initiative IR has planned to set up

- 1000 MW solar plants
- 200 MW of wind power plants

Solar Panels on trains –

¹⁵ Indian Railways, *sustainable Mass Transportation System, Environmental Sustainability Annual Report 2018-19*
https://www.indianrailways.gov.in/railwayboard/uploads/directorate/Environment_Management/Circulars/Enrolment_Sustainability_2018_19_R.pdf

¹⁶ Ministry of Railways- *Press Release on LED Lighting- 19th December 2017*
<https://pib.gov.in/PressReleasePage.aspx?PRID=1513207>

- Solar Panels have been installed on 10 Exhibition Coaches of Swachchhata Express. The 4.5 kWp solar panel can produce 10 KWh per day for electric supply to lights and fans inside the coach
- Flexible solar panels retrofitted on 13 coaches of Sitapur-Rewari passenger.

However, whether the end of life of the solar panels has been factored needs to be ascertained.

4.3 Green Powered Stations

- Asangaon Railway station of Central Railway under Mumbai Division has been declared 100% Green Powered Station in March 2018 as it is powered with windmill and solar panels.
- Guwahati Railway station in the Northeast Frontier Railway became the first Railway station in Northeast to run completely on solar power in May 2018.
- Moreover, 12 more stations have been declared Green Railway stations across IR, which are meeting their energy needs completely either through Solar or by Wind.
- Electricity supply between 10am to 5.30pm to three major railway stations in the western region, Erode, Coimbatore and Salem, is provided by solar power.
- The Nandyal-Yerraguntla section in Guntakal Division has been declared as the first solar section in the South-Central Railway. All stations in this particular section of South-Central Railway have been provided with solar panels to tap solar energy.

4.4 Alternative Fuels

Indian Railways has started using High Speed Diesel oil blended with 5% bio-diesel (B5) mixture at two locations Itarsi/WCR and Sanathnagar/SCR.

Subsequently, 76 locations on all Zonal Railways have started using the blended oil. Bio-Diesel plants at Tondiarpet/ Chennai and Raipur are under construction. Use of bio-diesel will result in reduction of Greenhouse Gases emissions, earning of carbon credits & saving of foreign exchange. Bio-diesel is also expected to be 5-10 % cheaper than High Speed Diesel.

4.5 CNG/LNG based Dual Fuel Diesel Engines for DEMU Trains

Natural Gas usage emits less GHG compared to liquid fuels. Indian Railways have the distinction of being the only railway in the world to be using CNG run locomotives for passenger transportation. IROAF is pioneering implementation of CNG based dual fuel fumigation technology on CNG DEMUs DPCs of 1400 hp to achieve up to 20% substitution of Diesel.

Twenty-five Diesel Power Cars of DEMUs have been converted into CNG based dual fuel engine.

Green Stations

Indian Green Building Council – Confederation of Indian Industry (IGBC-CII), developed Green Railway Stations Rating system to assess and facilitate the transformation of existing railway stations into eco-friendly ones.

Secunderabad Railway Station and Jaipur Railway Station achieved Green Railway Station Silver rating during the year 2017-18. Both these stations, were upgraded to Platinum rating during 2018-19.

Another 7 stations were assessed and certified in 2018-19. Kachiguda Station and Vijayawada Station of South-Central Railway achieved Gold rating. New Delhi Station of Northern Railway and Howrah Station of Eastern Railway achieved Silver rating. Varanasi Station of North Eastern Railway, Katra Station of Northern Railway and Chennai Station of Southern Railway were also certified.

Bio-toilets

In 2010, Indian Railways collaborated with Defence Research and Development Organisation (DRDO) for developing bio-toilets to prevent open discharge of human waste on Railway Tracks from trains.

'Swachh Rail, Swachh Bharat' campaign has been led by Indian Railways successfully as installation of bio-toilets in 95% trains across the Indian Railways network was complete by September, 2019¹⁷. More than 195,900 bio-toilets have been installed in nearly 53,900 coaches till March 2019, including 69,166 bio toilets fitted in 19,137 coaches during 2018-19. Out of 70,000 train coaches across the Indian Railways, only 2,300 train coaches are left for installation of bio-toilets installed in them as of October, 2019.

Cutlery in IRCTC

In 2018 IRCTC decided to introduce bagasse-based bio-degradable cutlery on eight Shatabdi and Rajdhani trains. Provision to collect the used cutlery that will be processed for disposal through composting was also planned.

¹⁷ www.financialexpress.com/infrastructure/railways/great-news-indian-railways-installs-bio-toilets-in-95-train-coaches-100-target-t-be-achieved-in-3-months/1725541/

5. GAPS AND CHALLENGES THAT NEED TO BE ADDRESSED

Challenges

The barriers are described as external and internal. External barriers relate to the political state and the suppliers. These barriers include lack of political will, limited mandate, lack of information, no push from the judiciary or consumer market, lack of incentives and absence of certifications and national eco-labeling programs.

Internal barriers are very specific to the organization, organization structure and procurement procedure. The internal barriers are mostly lack of awareness, lack of technical knowledge on sustainability specifications and cross-departmental functioning.

A barrier analysis was conducted by Indian Railways in 2010 and 2011 to understand the challenges for green procurement in 2010 and 2011. The findings of the barrier analysis are highlighted below.¹⁸ Remarks are also made where relevant how some of these barriers are addressed.

Barriers in the External Environment

- Since, Ministry of Environment and Forests was expected to drive, implement and promote green procurement related laws, Indian Railways will have a limited role. (This barrier is now addressed by Ministry of Finance (MoF) by setting a Task Force described earlier that has a representation of Indian Railways)
- The judiciary may have to play a role in accelerating implementation of green procurement to influence markets and vendors (This expectation is unrealistic as there is no legislation today in India on green procurement)
- Public Procurement Bill, 2012 introduced in the Parliament was rejected.
- Lack of information on green alternatives
- Vendors lack of incentive for research & development of green alternatives
- Verification of vendor's claim
(These have been some of the major challenges and they need to be addressed by re-introducing schemes like Eco Mark, setting up peering mechanism, taking on active promotion of green products and offering fiscal incentives)

Internal Organizational Barriers

- There is a perception that green products cost more or they have lower technical functionality compared to conventional products. (This barrier can be addressed through greater involvement of RDSO in environmental matters)
- Financing and budgeting practices still favor direct cost savings in initial investments in public procurement.

¹⁸ Guenther, E., Hueske, A. K., Kumar, S., & Parthasarathy, R. (2017, November). Sustainable management at Indian Railways: how a self-evaluation tool for barrier analysis facilitates green procurement. In *uwf UmweltWirtschaftsForum| Sustainability Management Forum* (Vol. 25, No. 3-4, pp. 235-246). Springer Berlin Heidelberg.

- Environmental and social benefits of green products and services are not monetized nor provided any weight in tender evaluation and decision making. Life cycle costs not considered while evaluating a product or service
- Lack of awareness among internal stakeholders on IR's sustainability initiatives. (This barrier is now addressed through training programs that will be launched at NAIR, Vadodara in environmental management and sustainability)
- Lack of knowledge and expertise in using tools such as Lifecycle Assessment (LCA).
- Procurement officials are not aware of SPP and its strategic advantage over long run. (This barrier can be addressed by offering training programs on SPP at NAIR as proposed in the present project)
- The institutional set up of IR, as observed in Chapter 2 is complex. The Environmental & Housekeeping Directorate steers green initiatives in IR. This directorate is formed separately under the Railway Board and the zonal offices.
- Procurement is handled by the Member - Materials Management under the Railways Board. There is a need therefore to ensure inter-departmental interactions so that there is a smooth implementation of the SPP process.

Individual level barriers

- There is a perception that SPP will lead to additional workload
- There is an inertia to change the existing procurement procedures

Both these barriers could be addressed through training on procurement officers and through sharing of experiences.

Vendor Management and Modifications in the Existing Procurement System

At present Indian Public Sector Undertaking Units and DGS&D recognised suppliers are the major vendors to IR. If IR seeks to implement SPP, then it is expected that these vendors will need to align with the new technical or green specifications.

The Materials Management Department at the Railway Board level should undertake market outreach with vendors with the proposed SPP process, at least for the initial list of green products. The Department of stores will have to assess the availability of options, quality/functionality and price competitiveness. RDSO will need to modify the vendor registration process in asking for sustainability related information on the products and credentials.

The COS will need to modify the stages in tendering process like pre-qualification, evaluation criteria, verification, compliance monitoring, keeping all the concerned departments involved and building the required documentation. Further COS will also assess the pros and cons of various bidding and evaluation options including possibility of introducing a green tender scheme.

Gaps to Be Addressed

Based on the challenges described, some of the gaps that need to be addressed are presented in Box 3. Suggestions on how to address some of the gaps are also given

- **Absence of a SPP Policy and a Road Map** supported by Guidelines at Organizational level. (This Policy may take into account the Vision and Mission statements of the Environmental Directorate of IR and SPP experience of other international railway organizations as presented in Annexure A)
- **Absence of a priority list of products and services** with sustainability criteria and targets. (IR may use the products recommended by the Task Force, use BEE star rating and existing certifications like CII's GreenPro) to create a product list with sustainable criteria. Key principles of circular economy may also be considered based on Annexure B of this report in identification of priority products and services)
- Although **several green initiatives** have been undertaken by Indian Railways, these **have not been leveraged under SPP**
- Market Readiness
 - Market study to identify sustainable alternatives fulfilling the functionality and being price competitive
- Vendor registration
 - Vendor registration to contain information on their sustainable practices/ certifications if any
 - The success of SPP is dependent on the vendor's ability and capacity to supply sustainable goods and services
- Changes in the Bidding procedure to enable green procurement
 - Identification of entry points in the existing bidding process that can be modified or need for a separate bidding procedure
 - System for monitoring the progress made towards the targets and impact assessment
- Training and Capacity Building
 - Awareness on SPP at medium to top level and training of procurement officials and vendors on various aspects of SPP is currently absent

Box 3: Gaps to be addressed for implementing SPP

6. SUSTAINABLE PUBLIC PROCUREMENT OUTLINE ACTION PLAN

The Outline Action Plan for the implementation of Sustainable Public Procurement in the Indian Railways is depicted in Figure 9.

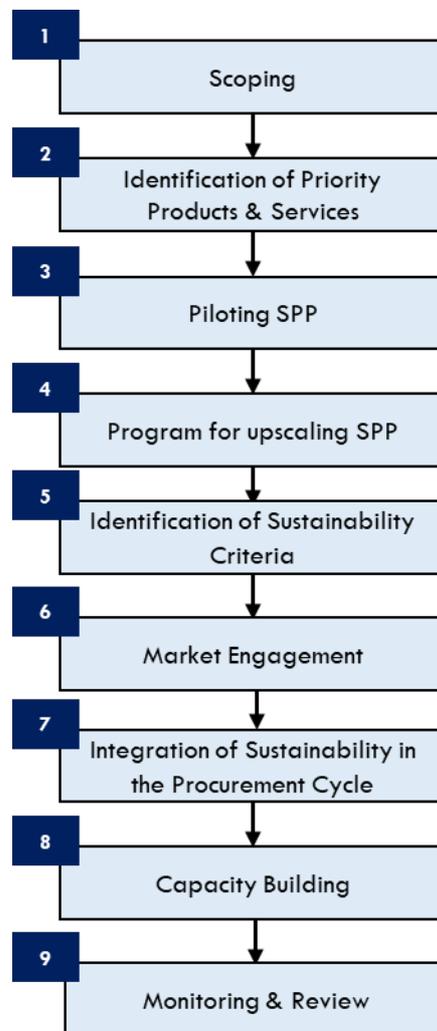


Figure 9: SPP Outline Action Plan for Indian Railways

Scoping of Products/Services

For the purposes of scoping, it is proposed that following categories of products & services may be excluded in the implementation of SPP.

- (i) Products manufactured by Indian railways
- (ii) Imported products of high value
- (iii) Products & services provided by PSUs or DGS&D.

Identification of Priority Products and Services

Identification of priority products will play an important role in the implementation of SPP. Following criteria is proposed (See Figure 10).

- a) Overall share of the product in IR procurement
- b) Alignment with products suggested by the SPP task force at MoF
- c) Alignment with ongoing Green Initiatives of the Indian Railways
- d) Environmental, Social and Economic benefits- across the life cycle
- e) GHG emission reduction
- f) Products with eco labels or cradle to cradle certification to promote Circular Economy (CE)
- g) Preference to recycled products without compromising the quality and avoiding environmental and social risks (Examples highlighted in Annexure B could be considered)
- h) International experience
- i) Contributing to NDC targets
- j) Market readiness, ensuring equivalent or superior functionally, availability & pricing

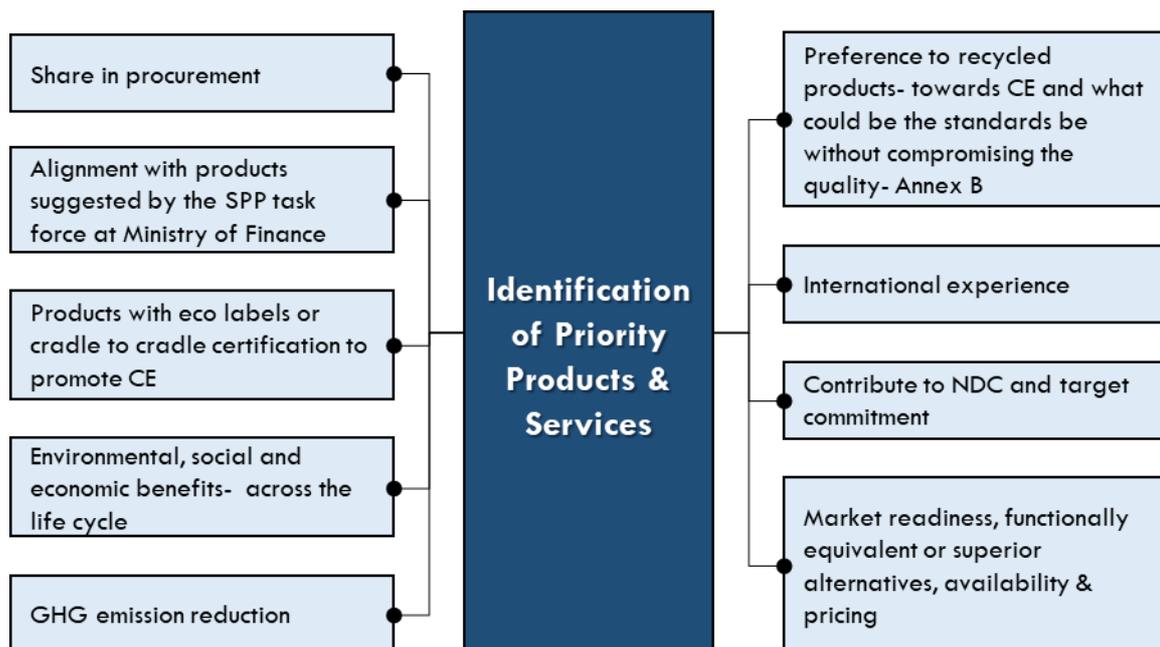


Figure 10: Identification of Priority Products & Services

Piloting SPP

Considering the challenges, gaps identified and proposed framework, piloting of the SPP in IR may be undertaken as below. The experience from the pilot will build on and strengthen the implementation of SPP for a scale up.

Decision points needed on these steps have also been outlined. These points provide the basis for stakeholder consultation.

- Identify where the pilot will be established (Western Zone, Railway board or both)
- Decide on category of pilot to be established: Products/services or both
- Prepare long list and shortlist the products/services based on the proposed framework
- Develop technical specifications for the shortlisted products & services
- Identify existing procurement process followed and recommend change/strengthening
 - Vendor registration criteria
 - Use of 3rd party/ certification scheme
 - Products with eco labels or cradle to cradle certification to promote Circular Economy
 - Provisions in the MPG
 - Bidding process- identify pre-qualification criteria, evaluation criteria
- Conduct training and build capacity of the procurement officers and the environment department at NAIR
- Monitor and track after the award
- Identify challenges faced during implementation of the pilot
- Report on the learnings and benefits
- Prepare a plan for expanding/upscaling the pilot

Figure 11 presents the above steps

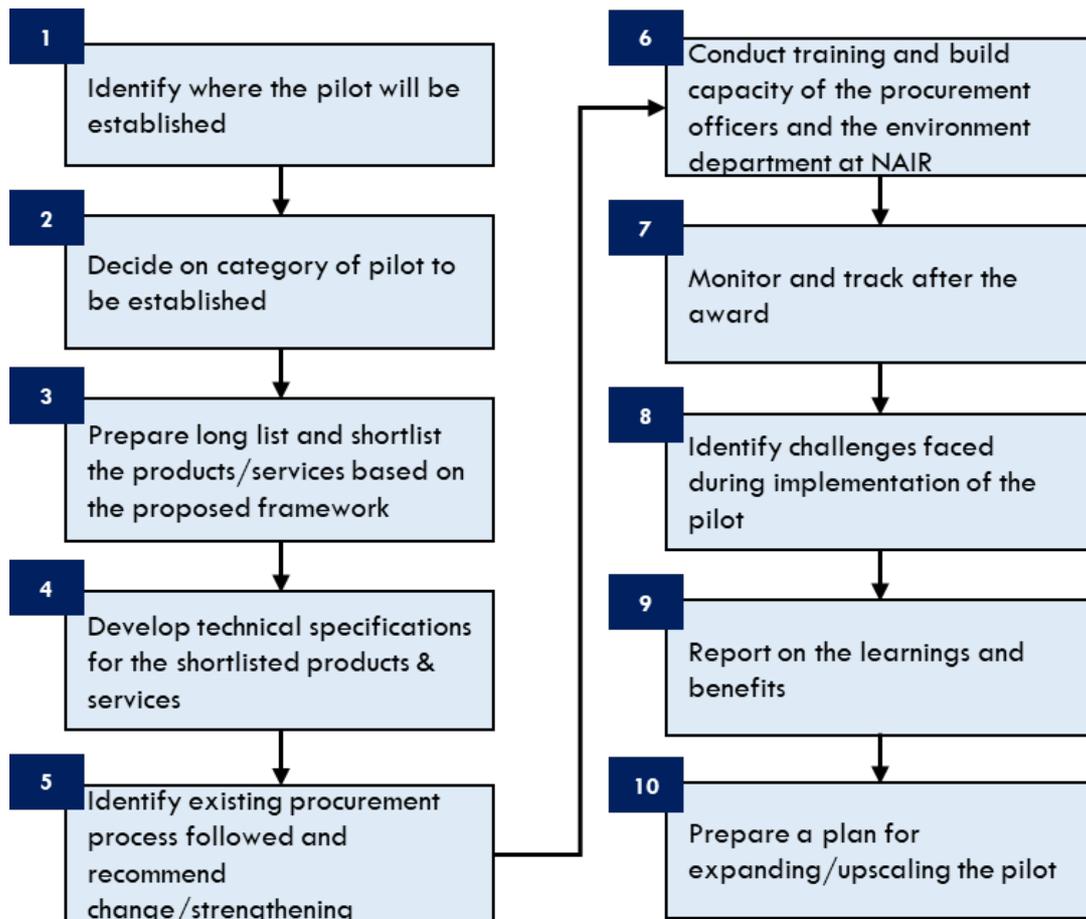


Figure 11: Flowchart for Piloting SPP

Program for upscaling SPP

Based on the pilot experience, a program for upscaling SPP will be formulated. A steering committee for implementation with key officials from different departments will be formed. This committee will be responsible for implementation, oversight and monitoring performance.

The SPP program will include targets, priorities, timeframe, list of prioritized products/services, teams responsible for implementation and mechanism for monitoring performance. This program should be aligned with the existing initiatives of IR's Environment Directorate.

Once the program is set, an implementation plan is to be established outlining specific tasks with responsibilities. This program needs to be communicated to all divisions of the Railway Board and other agencies particularly to the officials most affected and to suppliers who have a role to play in implementing the program.

Identification of Sustainability Criteria

A common sustainability criterion set enabling assessment of sustainability performance of products across their life cycle will be formulated. Criteria based on materials and production process specification can also be listed. For each criteria a verification method will also be determined in terms

of manufacturer's certificate, supplier declaration, test certificates etc. Ecolabels and certifications satisfying the sustainability criteria will also be identified.

Market Engagement

The market engagement process enables to identify potential vendors, build their capacity in the market to meet the sustainability requirements and inform the modification in the procurement and contract process. Engaging the market can help build trust and confidence with suppliers, create market conditions, showcase best examples and encourage innovations.

Integration of Sustainability in the Procurement Cycle

A review of the existing procurement procedures for the products and services identified will be imperative. This study will enable IR officials to understand the stages at which sustainability aspects can be introduced and the method of integration in the procurement cycle.

The Figure 12 presents an illustration of how sustainability can be incorporated in the existing procurement process in IR.

In the Raising of Indents- Estimation of Needs stage a needs analysis for the goods/services in terms of correct volume and evaluating methods to reduce consumption is required. This is followed by a market research for availability of the goods/services as per the sustainability requirements. For the bidding, the title should communicate the intention of procurement under SPP which makes it easier for prospective vendors to promptly recognize requirement.

The second stage of Consolidation of requirements & specifications will involve defining Technical specifications on environmental and social requirements. These specifications also need to ensure that there is no compromise on product quality and functionality.

A prequalification criterion to identify and register a vendor will be based on sustainability performance. The vendors will be assessed based on their compliance with environmental legislation and adherence to national social regulations and standards.

A standard bidding document with inclusion of sustainability criteria in the technical specifications, evaluation methodology and contract will be formulated to guide issue of tenders.

A framework for evaluation of bids will be developed. This framework will have a scoring system to check the bids on SPP for vendor pre-qualification on sustainability criteria, evaluation of the goods/service for the sustainability criteria listed in the technical specifications and the life cycle costing.

To execute a contract for the supply of goods/service an agreement is signed between the supplier and IR. This contract stipulates clauses on warranties, performance parameters, responsibilities of the supplier, maintenance schedules and end of life management. Sustainability requirement criteria for each of above clauses will be introduced to bind the supplier in delivering a sustainable product/service across its life cycle. A SPP guideline will be prepared for procurement officials in each stage to ensure smooth transition.

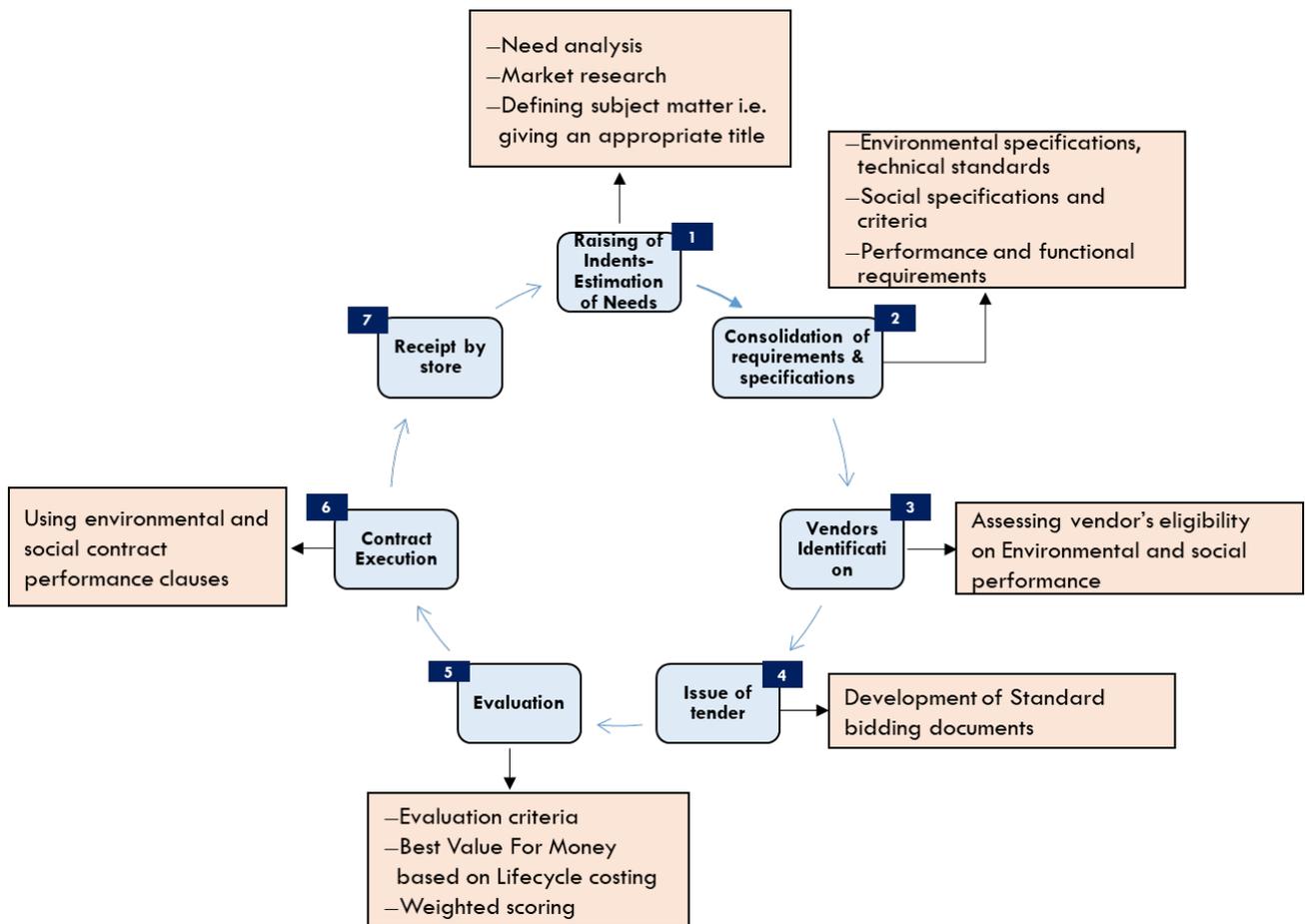


Figure 12: Incorporation of sustainability in the Procurement Process- an illustration

Capacity Building

A capacity building program targeting procurement officials on the changes of the procurement activities will be required. Officials will need adequate training on sustainability integrated detailed functions such as preparation of technical specifications, tender documents, evaluation of prequalification and bidding documents, among others. SPP guidelines will be developed to be used by public procurers.

Monitoring & Review

To drive continuous improvement and effectively target the life-cycle environmental impact and costs of goods and services purchased, a monitoring system will be needed. This would involve working directly with suppliers and departments where the goods have been used.

Data related to the performance of each SPP criteria will be collected and analyzed. Best practices and learnings from all products/services implemented will be documented. The current set of activities will be reviewed for further strengthening.

Table 1 outlines the steps, activities and the implementation agencies.

Table 1: Outline Action Plan

#	Outline Steps	Implementation Agencies	Activities
1.	Scoping of Products & Services	Railway Board, Zonal COS, IRILMM	<ul style="list-style-type: none"> Development of a master list of Products & services within the scope of SPP
2.	Identification of Priority Products / Services	Railway Board, Environment Directorate, Zonal COS, IRILMM	<ul style="list-style-type: none"> Determination of criteria to prioritize products/services from the master list Evaluation of products /services based on the criteria List of priority products & services
3.	Piloting SPP	Railway Board, Zonal COS, NAIR, RDSO, IRILMM, MoF SPP Taskforce	<ul style="list-style-type: none"> Identification of select priority products for the pilot phase Identification of zonal railways or Railway Board where the pilot will be established Technical specifications for the shortlisted products & services Identification of interventions in the existing procurement process Training of procurement officials Monitoring and tracking performance Document Experiences & challenges
4.	Program for upscaling SPP	Railway Board, Zonal COS, NAIR, RDSO, IRILMM, MoF SPP Taskforce	<ul style="list-style-type: none"> Development of a SPP steering committee Development of a program for expanding/upscaling the pilot Formulation of an implementation plan
5.	Identification of Sustainability Criteria	Railway Board, Zonal COS, NAIR, RDSO, IRILMM, BIS, Professional Certification bodies, Research & Academic Institution	<ul style="list-style-type: none"> Development of a common core and product specific sustainability criteria Identification of eco-labels & certifications relevant for the shortlisted products/services
6.	Market Engagement	Railway Board, Zonal COS, NAIR, RDSO, IRILMM	<ul style="list-style-type: none"> Identification of potential vendors Consultation workshops with vendors
7.	Integration of Sustainability Initiatives	Railway Board, Zonal COS, NAIR, RDSO, IRILMM, Rail India Technical and Economic Services Ltd	<ul style="list-style-type: none"> Identification of interventions at each stage of the procurement cycle Create supporting documentation for above Development of a SPP guideline for procurement officials
8.	Capacity Building	Railway Board, Zonal COS, NAIR	<ul style="list-style-type: none"> Development of training materials on SPP Organization of trainings for procurement officers at NAIR
9.	Monitoring & Review	Railway Board, Zonal COS, RDSO, Rail India Technical and Economic Services Ltd	<ul style="list-style-type: none"> Development of indicators to track performance Conduct of periodic review for feedback and adaptations

7. PROPOSED STAKEHOLDER CONSULTATION AND TOPICS FOR DISCUSSION

In order to obtain a feedback on the scoping report, proposed framework and steps for implementing the pilot, a stakeholder consultation meeting is proposed. Sections below present topics that need to be discussed and stakeholders who could be invited.

Topics for Discussions

The proposed topics for discussion are described in Box 4

- a) Improvement of SPP framework condition:
 - Process for Formation of Draft SPP Policy (Guiding and Operational Principles)
 - Would the Entry points for SPP be
 - Centralized or Decentralized?
 - If decentralized, in which zone should it be implemented?
 - Comments on framework to identify Priority Products & Services
- b) Details of the Pilot Project:
 - Suggestions on the Products/Services that may be considered for the Pilot
 - Opinion on market readiness & alternatives
 - Identification of team at IR that will oversee the pilot implementation
 - Timelines for implementation of pilot
 - Training of procurement officers and environment department on SPP
 - Workshop on modification of existing procurement process for implementation of the pilot

Box 4: Proposed key topics for discussion

Stakeholders to be invited for the consultation workshop

A list of stakeholders (not limited to) to be invited for the consultation workshop is given in Table 2.

Table 2: List of stakeholders to be invited for the consultation workshop

Indian Railways	
<ul style="list-style-type: none"> Ministry of Railways- Railway Board Environment Directorate PCMM- of different zones, especially Western zone 	<ul style="list-style-type: none"> IRCTC RDSO NAIR
Apex Environmental Bodies	
<ul style="list-style-type: none"> MoEFCCC- Resource Efficiency Cell Director, Joint Secretary CPCB- Member Secretary, Director of Eco Mark 	
Other Key Governmental Institutions	
<ul style="list-style-type: none"> Ministry of Finance Members of the Task Force on SPP 	<ul style="list-style-type: none"> Bureau of Indian Standards Ministry of Consumer Affairs
Think-tanks and Associations	
<ul style="list-style-type: none"> CII TERI 	<ul style="list-style-type: none"> FICCI Development Alternatives
Other Institutions	
<ul style="list-style-type: none"> UNEP-PAGE 	<ul style="list-style-type: none"> GIZ
PSUs	
<ul style="list-style-type: none"> BHEL NTPC DGS&D 	<ul style="list-style-type: none"> KVIC ACASH
Private sector	
<ul style="list-style-type: none"> Bombardier Alstom 	
Research and Academia	
<ul style="list-style-type: none"> IITs NEERI 	

ANNEXURES

A. Desk research on norms, standards and status of SPP for selected organisations of the international railroad network sector

The assessed railway organisations include DB Germany, SNCF France, SBB Switzerland and ÖBB Austria. The amount of information publicly available varies per organisation, thus this chapter does not aim to compare the described railway organisations with each other but rather to give a general picture of the efforts and status quo of the selected railway organisations towards sustainable public procurement. In addition, the industry initiative Railsponsible is briefly described in the following, as Deutsche Bahn (DB) and SNCF are two of the founding members.

Industry Initiative: Railsponsible

Railsponsible focusses on sustainable procurement in the railway industry. It was established in 2015 by the Chief Procurement Officers of six leading companies of the railway industry, with Deutsche Bahn (DB) and SNCF as two of the founding members. The initiative aims at improving the industry's supply chain and procurement strategies towards more sustainable and environmental practices, through capacity building and best practices sharing. Railsponsible is open to all companies and railway operators across the railway industry value chain.

Figure 13: Current members of Railsponsible Initiative
(Source: <https://railsponsible.org/about-us/#members>)



Norms, standards and status of SPP of four internationally operating railway organizations

Country: Germany	Organization: Deutsche Bahn AG (DB)
<p>Deutsche Bahn AG (DB) is a railway company owned by the German state. Procurement as a group function for DB AG is centrally organised and sustainable procurement is reflected through the group strategy and procurement guidelines. DB is a founding member of the Railsponsible Initiative, founded in 2015, and supports their claims and targets for sustainable procurement in the railroad sector.</p> <p>In 2019, 1.2 million orders with a procurement volume of €20 billion for DB Schenker & DB Arriva were processed. DB maintained contracts with around 19,000 suppliers of which 575 suppliers realize 80% of the purchasing volume. More than 550 suppliers, accounting for 60% of the top purchasing volume, have already submitted an evaluation with regard to the management system and its activities and results in accordance with CSR criteria. (Eco-Vadis or similar). The Code of Conduct for Business Partners is based on UN Global Compact Principles.</p> <p>In 2019, a Supplier Management and Rating Tool (SMaRT) was introduced, which allows an efficient supplier management on a digital platform.</p>	
<h3>Status of SPP</h3>	
<p>Good practice examples in procurement</p>	<ul style="list-style-type: none"> ● Green Evaluation IT-Tool evaluates raw material and energy consumption of the respective product in the manufacturing process and shows CO₂ balance of the product ● DB Marketplace platform for DB employees indicates office supplies with ecologic labels such as the Blue Angel, FSC and the EU Ecolabel ● Coffee and tea products in on-board bistros certified with FairTrade Label ● Square paved stones named RC40 made out of 40% recycling material used in train stations. By 2025, 75 train stations will be paved with RC40 stones: <ul style="list-style-type: none"> ○ Environmental impact: the stones are made out of 40% recycling material and thus, saves raw materials. Production and delivery of stones is climate-neutral.
<h3>Norms & standards</h3>	
<p>Environmental management system certification</p>	<ul style="list-style-type: none"> ● DIN ISO 14001 applied by Deutsche Bahn ● No EMAS certification
<p>CSR standards</p>	<p>DB applies the following standards and labels:</p> <ul style="list-style-type: none"> ● UN-Global-Compact-Index ● Global Reporting Initiative Standards (“Core”) ● World-Class Procurement Audit: Status Professional
<p>Sources:</p>	

- DB (2020). Integrierter Bericht 2019. Anhang zur Nachhaltigkeit - Umsetzung Strategie Starke Schiene. Available at: <https://ibir.deutschebahn.com/2019/de/anschluss-zur-nachhaltigkeit/einkauf/-beschaffung/umsetzung-strategie-starke-schiene>
- DB (). Innovationsmanagement bei der Beschaffung der Deutschen Bahn. Bahn aktuell 9/2019. Available at: <https://www.system-bahn.net/wp-content/themes/systembahn/includes/readpdf.php?file=27188>
- DB (2020). Official Website: Compliance/ Geschäftspartner. Available at: <https://www.deutschebahn.com/de/konzern/compliance/geschaeftspartner/verhaltenskodex-1191674>
- Railsponsible (2018). Climate Change Position Paper. Available at: <http://railsponsible.org/download/climate-change-position-paper/>
- <https://gruen.deutschebahn.com/de/massnahmen/bueromaterial>
- <https://gruen.deutschebahn.com/de/massnahmen/pflastersteine>
- <https://gruen.deutschebahn.com/de/massnahmen/oekobilanzierung>
- <https://gruen.deutschebahn.com/de/massnahmen/faire-produkte>

Contact points: Hans-Christoph Schwaerzler, DB AG

Country: France	Organization: Société nationale des chemins de fer français (SNCF Group)
<p>The Société nationale des chemins de fer français (SNCF Group), owned by the French State, comprises the enterprises SNCF Réseau, SNCF Gares & Connexions, Fret SNCF and SNCF Voyageur. SNCF is a founding member of the Railsponsible Initiative in 2015 and supports their claims and targets for sustainable procurement in the railroad sector. The “Responsible Procurement” unit provides procurement services to the SNCF Group. Their Excellence 2020 initiative includes an “Excellence in Procurement programme”, which is designed to make suppliers and employees safer, raise the quality of their suppliers, apply digital technology and to forge close relationships with the suppliers.</p> <p>The procurement volume in 2019 equalled €16.6 billion and around 31,000 suppliers, with a strong focus on purchases made in France. In 2017, 48% of contracts (by value) included a mandatory CSR criterion. Furthermore, 22% of suppliers were considered to have an advanced level of CSR maturity in 2017 (grade EcoVadis >65/100). The ethical procurement charter includes that the specifications and tender documents must aim at this promotion in accordance with the principles of corporate social responsibility (ISO 26000, GRI, and Global Compact Principles). The Code of Conduct for Business Partners is based on UN Global Compact Principles.</p>	
<p>Status of SPP</p>	
<p>Good practice examples in procurement of product groups</p>	<ul style="list-style-type: none"> • SNCF and their supplier Alstom develop modified hybrid trains for regional lines, these will begin running in 2021. The hybrid trains will replace TER diesel-powered trains and cut energy consumption by 20%. Furthermore, a 30-50% drop in maintenance costs is expected and 20% less greenhouse gas emissions produced

	<ul style="list-style-type: none"> • For ensuring better air quality in train stations SNCF is partnering with Tallano Technologie to develop tamic®, a device that captures fine particulates that are emitted by train brakes • SNCF signed a 25-year-contract with energy supplier Volitalia to purchase solar power. The annual production of the three power plants will be 200 GW-hour and is one step to boost SNCF’s use of renewable energies. • To replace fossil fuels in the short term, SNCF along with IFPEN (French institute for oil and new energies) conducts tests on B100 rapeseed biofuel in a Régiolis engine • SNCF has partnered with Mitsubishi Electric to develop a new transformer that is oil-cooled but also cooled through the natural passage of air on the roof. It saves 4% of energy compared with the conventional transformer and the sound emissions are reduced by 13 decibels. 70% less maintenance operations will be required and it may be applied to more kinds of SNCF rolling stock
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Norms & standards

Environmental management system certification	<ul style="list-style-type: none"> • no EMAS certification • no companywide DIN ISO 14001
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CSR standards	<p>SNCF applies the following standards and labels:</p> <ul style="list-style-type: none"> • Certification for Responsible Procurement and Supplier Relations (French label, backed by the standard ISO 20400:2017) • UN Global Compact Advanced • Corporate social engagement report backed by GRI standards and ISO 26000 guidelines • External audit scores: EcoVadis: 79/100 ; Vigeo Eiris 66/100
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Targets for sustainable procurement	<ul style="list-style-type: none"> • SNCF aims to have around 60 percent of the procurement volume covered by an Ecovadis certificate by 2020 • By 2020, 34% of suppliers are considered to have an advanced level of CSR maturity • Introduce a greenhouse gas (GHG) assessment clause into each transport and logistic contract
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Sources:

- <https://www.sncf.com/en/group/suppliers/our-commitments>
- <https://www.sncf.com/en/group/suppliers/procurement-system>
- <http://railsponsible.org/download/climate-change-position-paper/>
- <https://www.sncf.com/en/commitments/sustainable-development/stakeholder-ecosystem>
- <https://www.sncf.com/en/commitments/cse-priorities/sncf-accelerates-hydrogen-trains>
- <https://www.sncf.com/en/innovation-development/innovation-research/cleaner-air-in-paris-region-stations>
- <https://tech.sncf.com/en/a-cool-concept-for-an-innovative-transformer/>
- https://medias.sncf.com/sncfcom/finances/Publications_Groupe/SNCF_Group_Financial_Report_2019.pdf

Contact points: David Paris, SNCF

Country: Austria	Organization: Austrian Federal Railways (ÖBB)
<p>Austrian Federal Railways (ÖBB) is the national railway operator and owned by the Republic of Austria. Purchasing is organised according to a lead buyer concept, the internal service provider ÖBB-Business Competence Centre GmbH (ÖBB-BCC) summarises all the group's purchasing agendas centrally. ÖBB joined the Railsponsible Initiative in 2018 and since then is supporting their targets for sustainable procurement in the railway sector.</p> <p>In 2019, ÖBB maintained contracts with around 10,000 suppliers and their procurement volume equals €2 billion per year. Around 3,000 contracts are available in electronic catalogues with some 550,000 different order items in more than 500 product groups. The Austrian federal procurement law sets the rules for procurement decision. Environmental criteria are take considered in the award criteria and in the specifications, such as resource consumption, environmentally harmful ingredients, emissions in the production process, degree of recyclability, and others.</p>	
Status of SPP	
<p>Good practice examples in procurement of product groups</p>	<ul style="list-style-type: none"> • ÖBB-uniforms are certified by the bluesign standard und BSCI code of conduct • All coffee types must be certified with the Fairtrade label • The invitations to tender specify that the electricity mix purchased by the suppliers must consist of renewable sources • Motor vehicle fleet management: <ul style="list-style-type: none"> ○ Ecological Impact: CO₂ emissions have been reduced by considering ecological quality criteria in procurement process and by continuously renewing the fleet of motor vehicles. Currently, seven vehicles with Euro 4 engines, 752 with Euro 5 engines, 2,546 vehicles with Euro 6 engines and 47 electric vehicles are in operation. In order to further promote this positive development, special attention is being paid to the ecologization of the vehicle fleet in the procurement of motor vehicles. Criteria for emissions (both CO₂ and NOX) and fuel consumption were specified and evaluated.
Norms & standards	
<p>Environmental management system certification</p>	<ul style="list-style-type: none"> • EMAS certification of the subsidiary ÖBB Technische Services GmbH • DIN ISO 14001 applicable to ÖBB Technische Services GmbH, ÖBB Produktion GmbH, ÖBB-Rail Cargo Austria AG
<p>CSR standards</p>	<p>ÖBB applies following standards:</p> <ul style="list-style-type: none"> • GRI-Standards (core) • UN-Global-Compact-Principles
<p>Targets for sustainable procurement</p>	<ul style="list-style-type: none"> • ÖBB aims to have around 60 percent of the procurement volume covered by an Ecovadis certificate
<p>Sources:</p> <ul style="list-style-type: none"> • ÖBB Infrastruktur (2010). Nachhaltige Beschaffung – Ein Wegweiser. Available at: http://www.nachhaltigebeschaffung.at/sites/default/files/OEBB_Nachhaltige_Beschaffung_Ein_Wegweiser_web_0.pdf 	

<ul style="list-style-type: none"> • ÖBB Holding AG (2018). Nachhaltigkeitsbericht 2017/2018. Available at: https://konzern.oebb.at/de/nachhaltigkeit/nachhaltigkeitsberichte • ÖBB Holding AG (2019). Wir sind Klimaschutz - ÖBB Klimaschutzstrategie 2030. Available at: https://bcc.oebb.at/de/unsere-leistungen/einkauf • ÖBB Holding AG (2017). Nachhaltigkeitsbericht 2016/2017. Available at: https://konzern.oebb.at/de/nachhaltigkeit/nachhaltigkeitsberichte
Contact point: n/a

Country: Switzerland	Organisation: Swiss Federal Railways (SBB)
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Swiss Federal Railways (SBB) is a railway company owned wholly by the Swiss state. The group division “supply chain management” is responsible for the group-wide management of the entire value chain - from specification to procurement, production, distribution and disposal. SBB joined the Railsponsible Initiative in 2017 and supports their targets for sustainable procurement in the railroad sector.

In 2019, SBB awarded contracts worth CHF 5.65 billion (€5.28 billion) to their 15,542 suppliers. EcoVadis have already certified 85 suppliers, accounting for 34% of the purchasing volume, with regard to the management system and its activities in accordance with CSR criteria; this is now to become standard for critical product groups. SBB suppliers must comply with ISO 140001 certification and SBB requires an amfori audit in certain tenders (in some as a suitability criterion). Ecologically specified criteria are developed directly in the tendering process.

Status of SPP

Good practice examples in procurement of product groups	<ul style="list-style-type: none"> • In the product group work wear / textiles, the share of products certified according to CSR criteria is particularly high compared to the other product groups. There are many ecological alternatives for textiles, which are increasingly being used. Furthermore, a large part of SBB clothing will be given a second life starting in 2020 by donating it to the Swiss Red Cross. • All materials supplied for fasteners must be wrapped in specific Polyethylene film, which can be easily recycled by further processing.
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Norms & standards

Environmental management system certification	<ul style="list-style-type: none"> • No companywide EMAS certification • DIN ISO 14001 applicable to SBB Cargo AG, SBB GmbH Germany
CSR standards	<p>SBB applies following standards:</p> <ul style="list-style-type: none"> • GRI-Standards (core) • UN-Global-Compact-Principles
Targets for sustainable procurement	<ul style="list-style-type: none"> • By 2020, SBB intends to incorporate environmental and social aspects specific to each product group into all commodity group strategies

	<ul style="list-style-type: none"> • SBB aims to have around 60 percent of the procurement volume covered by an Ecovadis certificate, thereby ensuring sustainability for SBB in critical product groups • SBB plans to assess top and risk suppliers according to ecological and social criteria by 2020 and to systematically train buyers on ecological and social issues
<p>Sources:</p> <ul style="list-style-type: none"> • SBB (2019). Geschäfts- und Nachhaltigkeitsbericht 2018. Bern. • https://www.sbbcargo.com/de/unternehmen/qualitaet-sicherheit-umwelt/zertifikate.html • http://railsponsible.org/download/climate-change-position-paper/ • SBB (2020). Nachhaltigkeitsbericht 2019. Available at: https://company.sbb.ch/de/medien/publikationen/geschaefts-nachhaltigkeitsbericht/nachhaltigkeitsberichterstattung-2019.html 	
<p>Contact point: Mia Peric, SBB</p>	

B. International Examples of Good Practices in the Waste Sector and Circular Economy Considerations

SNCF Circular Economy Policy	
Country: France	Organization: Société nationale des chemins de fer Français (SNCF Réseau)
The SNCF Group implements a circular economy policy with actualized priority subjects every year. Core approaches at the subsidiary SNCF Réseau to implement the policy are rolling stock dismantlement and infrastructure components recovery.	
Implementation timeframe	<ul style="list-style-type: none"> • Circular economy (CE) policies implemented since 2013 • First circular economy strategy for a 5-year period was launched in 2013 • Strategy was updated in 2017 (period: 2017-2020)
Responsible organizational unit	<ul style="list-style-type: none"> • Circular economy policies are adopted at SNCF Group Level (parent company) • Subsidiary SNCF Réseau (manages, maintains and develops the French rail network) is responsible for the implementation
Actions taken	<p>1. Dismantling and recycling of rolling stock</p> <ul style="list-style-type: none"> • 90% of each TGV train is recycled (recyclable materials such as (stainless) steel, copper and electric motors make up large parts of the rolling stock) <ul style="list-style-type: none"> ○ SNCF sets up special breakup facilities and pools the generated waste • In 2016, 5-year contract was awarded to break up 250 electric multiple units (EMUs) • 250 of wagons laid end to end are set to be dismantled by 2028 <p>2. Reclaiming/valorising track components</p> <ul style="list-style-type: none"> • Objective: develop new ways to recycle valuables, ensure traceability of all materials that enter the yard and build an innovative, responsible business model <p>2.1 Ballast</p> <ul style="list-style-type: none"> • Reuse for railway purpose after screening or recombination • Direct reuse on mobile sites of 30 to 50% of the ballast on the track <p>2.2 Rails</p> <ul style="list-style-type: none"> • 97.3% of rails were recycled in 2019 • Reuse of rails for railway purposes (if level of wear allows) • Reuse of high speed line rails on secondary service tracks

	<ul style="list-style-type: none"> • Recycling through local sectors: sale and redesign of steel • Recycling of ferrous metals in rails: <ul style="list-style-type: none"> ○ reused to manufacture iron and concrete ○ transformation of deposits into chips, packages, briquettes and shots <p>2.3 Wooden Sleepers</p> <ul style="list-style-type: none"> • Energy recovery for the production of industrial steam (paper etc.) or cement plants • Improving traceability of removal process of sleepers <p>2.4 Concrete Sleepers</p> <ul style="list-style-type: none"> • Crushing of old sleepers: heavy pieces can be reused as road sub-layer or for construction of sewage systems • R&D on future potential for reuse as gutters, walls, gabions or street furniture <p>2.5 Non-Ferrous Metals (included in catenary cables etc.)</p> <ul style="list-style-type: none"> • Material recovery rate of non-ferrous metals: 98% as supply for steel mills, refineries and foundries
Benefits	
Economic	<ul style="list-style-type: none"> • 45 million of SNCF Réseau's 2018 revenue came from sales of end-of life materials • Between 2017 and 2018, revenue from reclaiming discarded materials rose by 20% • Reduction of the realms of land for the supply and de-supply of building sites through reuse of ballast
Environmental	<ul style="list-style-type: none"> • Reduced pressure on natural resources and the impacts associated with the extraction of virgin aggregate • Reduced energy consumption and emissions related to the transportation of materials
Social	n/a
<p>Sources:</p> <ul style="list-style-type: none"> • SNCF (2017): Corporate Social Engagement Report 2017: SNCF – Delivering Useful, Open Mobility. Available at: http://medias.sncf.com/sncfcom/rse/bilanrse/CSR_Annual_Report_EN.pdf. • SNCF Réseau (2028): Agorize Circular Economy Challenge: Material Sheets. Available at: https://www.agorize.com/de/challenges/sncf-economie-circulaire/pages/ressources?lang=en (Material Sheets direct download available at: https://cdn.fs.agorize.com/DWfsNv69QYm72OezDiq2) • https://www.bipiz.org/en/csr-best-practices/sncf-contribution-to-a-more-circular-economy.html • https://www.sncf.com/de/konzern/profil-und-kennzahlen/unternehmensportrait/wer-wir-sind • https://www.sncf.com/en/commitments/sustainable-development/leading-the-charge-for-the-planet 	

FRIVEP initiative - recycling work wear into functional fabrics

Country: France	Organization: Société nationale des chemins de fer Français (SNCF)
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In 2016, SNCF initiated a cooperation with environmental NGO Orée. Together with industry partners and the support of several French ministries, they launched the recycling initiative FRIVEP in 2018. In January 2019, FRIVEP inaugurated the first sorting and recycling centre for work wear.

Implementation timeframe	Since 2016 (ongoing)
Responsible organizational unit	<ul style="list-style-type: none"> Initiated by the environment referents at SNCF (precisely: responsible supervisor and contact person is the circular economy and waste referent in the sustainable development department of SNC)
Actions taken	<ul style="list-style-type: none"> Objective: to recycle discarded work wear clothing into renewable functional fabrics, which are 100% recycled, recyclable and PFC-free functional After an experimental phase from 2018 to December 2019, FRIVEP inaugurated the first sorting and recycling centre for work wear in January 2019

Benefits

Economic	<ul style="list-style-type: none"> Expected utilisation of discarded textiles of up to 150 tonnes in 2020
Environmental	<ul style="list-style-type: none"> Reduction of 21,500 kg of textile waste in pilot phase as a result of upcycling discarded work wear clothing
Social	n/a

Sources:

- SNCF (2017): Corporate Social Engagement Report 2017: SNCF – Delivering Useful, Open Mobility. Available at: http://medias.sncf.com/sncfcom/rse/bilanrse/CSR_Annual_Report_EN.pdf.
- <http://www.circularity.eu/project/sympatex/>
- <https://www.ecologique-solidaire.gouv.fr/vetements-et-uniformes-professionnels-naissance-dune-filiere-recyclage>
- <http://www.oree.org/frivep.html>

La Boutique Éco Platform – sharing and reusing non-needed business equipment

Country: France	Organization: Société nationale des chemins de fer Français (SNCF Réseau)
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SNCF Réseau installed an internal Web-based platform on which SNCF Group employees can share, donate and exchange non-needed or very infrequently used business equipment instead of purchasing new materials. Intrapreneurs (from SNCF's own "intrapreneurial programme") designed the platform.

Implementation timeframe	<ul style="list-style-type: none"> Platform launched in June 2018
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Responsible organizational unit	<ul style="list-style-type: none"> Procurers on every level of the SNCF Group
Actions taken	<ul style="list-style-type: none"> La boutique éco platform allows members to upload and search for non-needed business items across all SNCF Group member organizations, e.g. personal protective clothing and equipment, station furniture, office furniture, IT equipment, office supplies, tools and communication materials.
Benefits	
Economic	<ul style="list-style-type: none"> € 473 204 of purchasing costs have been saved since the launch of the platform
Environmental	<ul style="list-style-type: none"> Reduced material consumption through the (further) use of existing equipment
Social	<ul style="list-style-type: none"> Employee empowerment to contribute to CE and enhanced communication between employees and different subsidiaries of SNCF Group
Sources:	
<ul style="list-style-type: none"> http://garepartagee.sncf.com/lintrapreneuriat-chez-sncf/ https://laboutiqueeco.sncf.fr/comment-ca-marche/ 	

Resource protection through recycling and extended service life

Country: **Germany** Organization: **Deutsche Bahn AG (DB)**

DB's goal is to use raw materials as well and as sparingly as possible in order to protect natural resources. To achieve this goal the organisation pursues three main approaches: a high recycling rate, increased use of recycled materials and a longer service life of materials. The corporation also applies intelligent disposal management systems.

Implementation timeframe	<ul style="list-style-type: none"> First DB sustainability report published in 2007 (measures were adopted at different starting points since then)
Responsible organizational unit	<ul style="list-style-type: none"> Different measures concern different business units of the DB Group <ul style="list-style-type: none"> Reusing concrete ties: DB Bahnbau Fleet maintenance and revision: DB Fahrzeuginstandhaltung Other measures, such as usage of recycled paper, apply to all units
Actions taken	<p>Approach: Recycling and extending service life of products as long as possible</p> <ul style="list-style-type: none"> Objective: reaching a recycling quota of 95% of all raw materials used by the end of 2020 The target has already been achieved and even surpassed with a recycling rate of 98% in 2019 <p>1. Reusing concrete ties and ballast</p> <ul style="list-style-type: none"> Re-integration and re-conditioning of wooden, concrete or bridge sleepers, complete track yokes, small irons or ballast within the DB track

	<p>network if possible (every year around 200.000 sleepers are being reused or recycled this way)</p> <ul style="list-style-type: none"> Recycling and usage as valuable construction materials elsewhere, e.g. as chippings in road construction <p>2. Expanding the service life of the fleet</p> <ul style="list-style-type: none"> Successive modernization, redesign and technological revision of DB's ICE and IC fleet instead of new purchases Targeted production of individual spare parts via 3D printing to reduce consumption of raw materials <p>3. Use of recycled paper</p> <ul style="list-style-type: none"> Since 2014, DB exclusively uses recycled printing and copy paper in its offices; reports are printed on 100% recycled paper certified with the Blue Angel certification <p>4. Disposal Management</p> <ul style="list-style-type: none"> DB uses an IT tool to save and reuse as much waste as possible by documenting, managing and optimizing waste and recycling flows
Benefits	
Economic	<ul style="list-style-type: none"> DB saves up to 80% of material cost through modernization of trains instead of purchasing new fleets Using recycled paper saves resources, cutting electricity by up to 70% and water up to 60% and using almost no wood
Environmental	<ul style="list-style-type: none"> Reduced material consumption through modernization and recycling approaches Shorter transport distances through reuse of construction materials within the DB track system
Social	n/a
<p>Sources:</p> <ul style="list-style-type: none"> DB (2020). Sustainability Reports. Available at: https://www.deutschebahn.com/de/nachhaltigkeit/ueberblick/service_download/berichte_neu/ https://www.deutschebahn.com/en/Ressource_efficiency-1212814 https://www.bahnbaugruppe.de/bahnbaugruppe-de/spezialgewerke/recycling-424166 https://gruen.deutschebahn.com/de/strategie https://gruen.deutschebahn.com/de/strategie/strategie-ressourcenschutz https://www.deutschebahn.com/en/group/business_units?qli=true&pageNum=0 	

Sustainable gastronomy on trains

Country: Germany	Organization: Deutsche Bahn AG (DB)
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Through usage of sustainable products and measures for the reduction of food waste in staff and customer restaurants and bistros, DB aims to reduce food and resource waste within its service offers. DB cooperates with a waste disposal company to provide biogas plants with food leftovers from staff restaurants.

Implementation timeframe	<ul style="list-style-type: none"> First DB sustainability report published in 2007 (measures were adopted at different starting points since then)
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Responsible organizational unit	<ul style="list-style-type: none"> Subsidiary company of DB: DB Gastronomie GmbH
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Actions taken	<p>1. Production of biogas from food waste</p> <ul style="list-style-type: none"> Food waste from DB-owned staff restaurants is collected and transferred for plants to produce biogas (cooperation with LOGEX) – biogas is utilized in combined heat and power plants where heat is generated that is used for heating or fed into the power grid Remaining product at the end of the fermentation process is used as organic fertiliser in agriculture <p>2. Sustainable practices and products in DB service provision</p> <ul style="list-style-type: none"> Usage of reusable tableware in the staff restaurants “DB reusable cup” as an alternative to disposable cups for customers Fair Trade products such as coffee/ tea are offered in the on-board bistros Durable products are donated instead of thrown away when no longer needed, e.g. after a change in the range
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Benefits

Economic	n/a
Environmental	<ul style="list-style-type: none"> Reduced food and plastic/ paper waste Sustainable production of energy and organic fertiliser for agriculture out of food waste
Social	n/a

Sources:

- <https://gruen.deutschebahn.com/de/massnahmen/biogas>
- <https://gruen.deutschebahn.com/de/strategie/strategie-ressourcenschutz>
- https://www.deutschebahn.com/de/nachhaltigkeit/ueberblick/service_download/berichte_neu/
- https://www.deutschebahn.com/en/group/business_units?qli=true&pageNum=0
- <https://www.deutschebahn.com/de/konzern/konzernprofil/Konzernunternehmen/dbgastronomie-1191960>

Modern raw materials management	
Country: Austria	Organization: ÖBB Infrastructure AG (ÖBB)
<p>ÖBB reduced its consumption of raw materials by reusing and recycling building materials from about 300 to 400 active construction sites each year, enforcing a strict waste processing, and management system.</p>	
Implementation timeframe	<p>Different projects are implemented within different timeframes:</p> <ul style="list-style-type: none"> • “Koralm” tunnel construction: 2009-2026 • First sustainability report was published in 2006 (ongoing implementation of measures since then)
Responsible organizational unit	<p>Different measures concern different business units of the ÖBB Infrastructure AG:</p> <ul style="list-style-type: none"> • Recycling of building materials: Rail Equipment GmbH • Trainings: carried out by ÖBB Line Management and Asset Development Division of ÖBB Infrastructure AG
Actions taken	<p>1. Reusing and recycling building materials and wastes</p> <ul style="list-style-type: none"> • About 1,5 tonnes of building wastes (such as building rubble, wooden and concrete railway sleepers etc.) used to produce cement in 2017 • Before assigning waste to a specific collector or treater, ÖBB carries out various chemical analyses comprising 60 parameters • Best practice example: Construction of the “Koralm” tunnel, which produced about 8.6 million tons of excavation material: 1.5 million tons were used immediately for the production of aggregates that then went into concrete production; 2.9 million tons were reused as backfill material for the new line (awarded with the 2nd place of the Austrian waste management prize “Phoenix 2016”) • ÖBB transports non-reusable waste via train to a local waste incineration plant, where the waste is transformed into energy <p>2. Training of staff members on waste management possibilities and regulations</p> <ul style="list-style-type: none"> • ÖBB Line Management and Asset Development Division provided information on legal implications and implementation possibilities in waste disposal in over 250 training courses
Benefits	
Economic	<ul style="list-style-type: none"> • “Koralm” tunnel: approximately 1.2 million tons of tunnel excavation material are used directly on the construction site for concrete production (saves material procurement costs)
Environmental	<ul style="list-style-type: none"> • Usage of ÖBB waste in the waste incineration plant produces up to 74,200 MWh of electricity, which corresponds to the supply of around 21,000 households and saves 28 million litres of heating oil

Social	n/a
Sources:	
<ul style="list-style-type: none"> • ÖBB Nachhaltigkeitsbericht/ Sustainability Report 2017/18: https://konzern.oebb.at/de/nachhaltigkeit/nachhaltigkeitsberichte • https://konzern.oebb.at/de/nachhaltigkeit/ressourceneffizienz • https://konzern.oebb.at/de/nachhaltigkeit/ressourceneffizienz/weg-damit-das-zweite-leben-des-abfalls • https://konzern.oebb.at/de/nachhaltigkeit/nachhaltigkeitsberichte 	

Ensuring a responsible and efficient value chain	
Country: Switzerland	Organization: Swiss Federal Railways (SBB)
To ensure a responsible and efficient value chain within the company, SBB implements various measures in the three areas of sustainable procurement, waste and recyclables management and life cycle assessment.	
Implementation timeframe	<ul style="list-style-type: none"> • 2018-2020 (objectives and implementation timeframe of current sustainability report)
Responsible organizational unit	<p>Different measures concern different business units of the SBB:</p> <ul style="list-style-type: none"> • Uniform waste management (Group-wide): Competence Center Waste Management (KPZ) • Procurement: <ul style="list-style-type: none"> ○ Technical driver for sustainability in procurement is the Group's Sustainability Department ○ Strategies and measures are decided by highest body in SBB Purchasing ○ Purchasing organizations of the Group and the divisions are responsible for implementation ○ 2019: creation of additional coordination office in central purchasing • Life Cycle Management: SBB Finance <p>The Group's Sustainability Team and the Sustainability Departments of the divisions are strategically responsible for ensuring that a holistic life cycle approach is anchored at SBB</p> <ul style="list-style-type: none"> ○ Specialist departments are responsible for implementation ○ 2018: creation of a specialist management team by SBB Finance to apply life cycle costing (LCC) in all divisions
Actions taken	<p>1. Waste and recyclable materials management</p> <ul style="list-style-type: none"> • All material movements are recorded centrally by the employees on site (this increases transparency and traceability in the cycle of specific product groups and facilitates their pooling, separation and sale of recyclable materials)

	<ul style="list-style-type: none"> • Project “Reusable Materials and Recycling”: SBB offered certain recyclable materials on the market via an auction platform • resale@sbb: online shop for used railway products, e.g. SBB vehicles and sleepers can be purchased and reused on secondary or industrial tracks or for external usage • Consumption of plastic by end consumers: collection of PET bottles separately from other waste, in addition to paper and aluminium at larger stations • Renewed invitation to tender for Group-wide waste disposal from 2019 onwards: only a maximum of 25 transport kilometres can be billed per collection of the recyclables <p>2. Sustainable Procurement</p> <ul style="list-style-type: none"> • 44 SBB suppliers have completed a sustainability questionnaire from the EcoVadis initiative by 2018: evaluates, among other things, the suppliers' resource management and waste management - results are made available to buyers <p>3. Life Cycle Analysis</p> <ul style="list-style-type: none"> • Keeping valuable resources in circulation to minimise consumption and thus the amount of waste • Best Practice Example: Platforms with recycled asphalt at stations in Hauptwil and Kradolf (pilots for testing how high the recycled content in the asphalt can be in order to meet requirements in quality and service life, and whether the asphalt thickness of platforms can be reduced)
Benefits	
Economic	<ul style="list-style-type: none"> • SBB recycling centre has increased its additional revenue in 2018 due to good raw material prices, the sale of recyclable materials via online auctions, the consistent separation of quality levels and the pooling of larger quantities • Auctions of recyclable material achieved significantly higher prices (i.e. by about 15 percent) and increased transparency in the entire sales process • Renewed tender for waste disposal: disposal companies concerned sought regional transport partners: tender specification (max. 25 transport km) will reduce costs by 30 to 40 percent
Environmental	<ul style="list-style-type: none"> • Reduced CO₂ emissions through shortened transport distances of waste disposal • Recycled asphalt: conserves the natural resources of gravel and sand as the starting materials for asphalt and reduces the environmental impact of the production and transport of fresh asphalt: use of recycled asphalt can thus reduce environmental footprint over the entire life cycle by up to 25 percent
Social	n/a

Sources:

- SBB Geschäfts- und Nachhaltigkeitsbericht 2018: <https://company.sbb.ch/de/ueber-die-sbb/verantwortung/nachhaltigkeit-bei-der-sbb.html>
- <https://sbbresale.ch/kreislaufwirtschaft-dient-der-ganzen-bahnbranche/>

Sustainable sleepers produced from recycled and end-of life materials

Country: Italy	Organization: Greenrail
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Greenrail produces sleepers covered with a blend of End-of-Life Tyres (ELTS) and recycled plastic. The use of innovative, circular economy materials makes the sleepers more durable and reduces each sleeper’s resource consumption.

Implementation timeframe	<ul style="list-style-type: none"> • Production since November 2012
Responsible organizational unit	n/a
Actions taken	<ul style="list-style-type: none"> • Sustainable sleepers: outer cover made of a blend of ELTs and recycled plastic, inner core of pre-stressed, reinforced concrete, to replace outdated concrete railway sleepers

Benefits

Economic	<ul style="list-style-type: none"> • Reduction of the maintenance cost through less pulverization of the ballast und the sleepers and longer lifespan of the sleepers • Traceability of each sleeper due to RFID technology enables documentation and provenance of materials
Environmental	<ul style="list-style-type: none"> • Recovery and reuse of tonnes of plastic and ELTS: 1670 Greenrail sleepers (equal to 1 km of rail line) contribute to the recovery of up to 35 tonnes of ELTs and plastic from urban waste • Reduction of vibration and noise levels deriving from railway traffic
Social	n/a

Sources:

- <https://circulareconomy.europa.eu/platform/en/good-practices/greenrail-innovative-eco-sustainable-railway-sleepers>
- <http://www.greenrailgroup.com/en/sustainability/>

Railway sleepers made from recycled plastic

Country: Australia	Organization: Integrated Recycling
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The railway sleepers made from recycled plastic sourced in Australia, including vineyard covers and cotton bale wraps. They are the result of nearly four years of research and product development led by Integrated Recycling and Monash Institute of Railway Technology.

Implementation timeframe	<ul style="list-style-type: none"> June 2019
Responsible organizational unit	n/a
Actions taken	<ul style="list-style-type: none"> Sustainable sleepers: 190 railway sleepers that are 85 % made from recycled plastic are installed at Richmond station in Melbourne for 18-month trial.
Benefits	
Economic	<ul style="list-style-type: none"> Lifespan of up to 50 years, which is three times longer than traditional timber sleepers Manufactured at half the cost of traditional timber sleepers and require less maintenance
Environmental	<ul style="list-style-type: none"> Reduction of the need for timber resources and of concrete production (the second-largest carbon emitter in the world) The sleepers require less energy and resources to manufacture, hence producing significantly less greenhouse gases For every kilometre of track installed with the sleepers, 64 tonnes of plastic have been recycled
Social	n/a
Sources:	
<ul style="list-style-type: none"> https://www.sustainability.vic.gov.au/About-us/Latest-news/2019/06/25/03/36/Recycled-plastic-railway-sleepers-installed-at-Richmond-Train-Station#:~:text=In%20a%20first%20for%20Victoria's,sleepers%20made%20from%20recycled%20plastic.&text=The%20sleepers%20require%20far%20less,longer%20than%20traditional%20timber%20sleepers https://wastemanagementreview.com.au/recycled-sleepers-richmond/ https://www.railway-technology.com/news/railway-sleepers-recycled-plastic-richmond-station/ https://www.createdigital.org.au/one-company-recycling-plastic-waste-railway-sleepers/ http://www.integratedrecycling.com.au/railway-sleepers/ 	

High speed line in the UK

Country:

United Kingdom

Organization:

High Speed Two (HS2) Ltd (high speed railway line)

H2S is a low carbon high-speed line in the UK, providing rail capacity across the kingdom to cope with increasing passenger numbers. It is considered to be Europe's largest infrastructure project. The project's goal is to deliver value and follow the principle of retaining and recapturing value in a circular economy. In order to deliver this goal, HS2 follows its own circular economy principles, which will be monitored throughout the project (see actions taken).

Implementation timeframe

- Launch: 2012
- Currently under construction (Phase 1: 2029 – 2035)

Responsible organizational unit

n/a

Actions taken

HS2 Circular Economy Principles:

	<ul style="list-style-type: none"> • Keep resources in use for as long as possible • Recover and regenerate resources at the end of use • Keep resources at their highest quality and value at all times. <p>Concrete actions:</p> <ul style="list-style-type: none"> • Reuse of 90% of the 128m tonnes of excavated material along the route • Recovering material resources (e.g. structural steel or felled timber), during demolition and site clearance • Embedding of CE principles with HS2 suppliers
Benefits	
Socio-economic	<ul style="list-style-type: none"> • Creation of over 7,000 jobs (04/2019) • HS2 is expected to generate around £92 billion in benefits to the UK economy (04/2019) • Funding of local community projects
Environmental	<ul style="list-style-type: none"> • Carbon dioxide emissions: <ul style="list-style-type: none"> ○ Per passenger-kilometer: Estimated to be 8 grams for high-speed rail, in contrast to 22 grams for conventional intercity rail ○ Low carbon for long distance travel: emitting 17 times less carbon than the equivalent domestic flight and 7 times less carbon than the equivalent car journey
<p>Sources:</p> <ul style="list-style-type: none"> • https://medium.com/circulatenews/applying-the-circular-economy-to-high-speed-railway-8914da6745aa • https://www.hs2.org.uk/what-is-hs2/ • https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/657833/hs2_circular_economy_principles.pdf • https://assets.hs2.org.uk/wp-content/uploads/2019/08/14094931/our-story-and-key-facts.pdf • https://www.gov.uk/government/organisations/high-speed-two-limited 	

SECTION 2

POLICY ANALYSIS PAPER

Dr. Prasad Modak, Walter Kahlenborn



List of Abbreviations

BHEL	Bharat Heavy Electricals Limited
CBG	Compressed Biogas
CFL	Compact Fluorescent Lamps
CII	Confederation of Indian Industries
CII-IGBC	CII- Indian Green Building Council
CPCB	Central Pollution Control Board
CPSE	Central Public Sector Enterprise
CRIS	Center for Railways Information System
EOI	Expression of Interest (EOI)
EPR	Extended Producer Responsibility
ESG	Environment, Social, Governance
EU	European Union
EU-REI	EU-Resource Efficiency Initiative
GEN	Global Ecolabelling Network
GeM	Government e-Marketplace
GFR	General Financial Rules
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GoI	Government of India
GPP	Green Public Procurement
HSE	health, safety and environment
IGES	Institute for Global Environmental Strategies
IR	Indian Railways
IROAF	Indian Railways Organization for Alternate Fuel
LCA	Life Cycle Assessment
LCC	Life Cycle Costing
LED	light-emitting diode
MMTPA	metric tonnes per annum
MoEF	Ministry of Environment, Forests
MoF	Ministry of Finance
MSEs	Micro and Small Enterprises
MW	Megawatt
NITI	National Institution for Transforming India

NR	Northern Railways
NTPC	Thermal Power Corporation
ONGC	Oil and Natural Gas Commission
PM	Particulate Matter
PAGE	Partnership for Action on Green Economy
PSU	Public Sector Undertaking
REMCL	Railway Energy Management Company Limited
RSP	Responsible Sourcing Policy
SCP	Sustainable Consumption and Production
SATAT	Sustainable Alternative Towards Affordable Transportation
SPP	Sustainable Public Procurement
TMTCO₂e	thousand metric tonnes carbon-dioxide equivalent
TERI	The Energy and Resources Institute
UCO	Used Cooking Oil
UNEP	United Nations Environment Programme
VOC	Volatile Organic Compound
WCR	West Central Railway
10YFP	10 Year Framework of Programmes on Sustainable Consumption and Production Patterns, now called <i>One Planet Network</i>

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1. INTRODUCTION

1.1 Purpose and scope

Indian Railways (IR) is keen to introduce Sustainable Public Procurement (SPP) in their operations. Formulation of a Policy for SPP plays an important role in guiding an action plan for implementation. The earlier Scoping Study provides an overview of the general policy framework on public procurement covering General Financial Rules (GFR). The study also describes actions taken such as setting of the Task force on SPP at the Ministry of Finance (MoF).

This report presents an overview of SPP initiatives and experiences in India covering public and private sector and multinational organizations. The report is intended to provide input in the preparation of an action plan for SPP at IR.

1.2 Structure of the report

The report consists of four chapters. Chapter 1 presents purpose and scope. An overview of SPP related initiatives in public and private sector is provided in chapter 2. Enabling initiatives as well as gaps and challenges are also presented. Chapter 3 describes various support initiatives on SPP in India by international bodies. Chapter 4 provides recommendations.

2. SUSTAINABLE PUBLIC PROCUREMENT IN INDIA

Various initiatives and research reports have been released on SPP in collaboration with the Government of India. They include Sustainable Public Procurement: towards a low-carbon economy by TERI (2008)¹⁹, a committee to formulate guidelines on Green Public Procurement (GPP)²⁰, a report on Green Public Procurement (GPP) Guidelines in India by the Confederation of Indian Industry (2012)²¹, Guidelines on Corporate Social Responsibility and Sustainability urge the Central Public Sector Enterprises (CPSEs) to initiate and implement measures towards a GPP supply chain (2013), the Department of Expenditure under Ministry of Finance established a Task Force on SPP (2018)²², NITI Aayog jointly with the European Union's Resource Efficiency Initiative (EU-REI) brought out a Status Paper on Resource Efficiency: Way Forward towards Circular Economy" (2019)²³, a report commissioned by United Nations Environment Program (UN Environment) was published on Sustainable Public Procurement in India: Selection of priority products and Preliminary Market Assessment²⁴. Figure 1 highlights some of these initiatives, regulations, laws and key publications released on SPP over the years.

¹⁹ IISD, TERI 2007

²⁰ Hasanbeigi et al. 2019

²¹ CII 2012

²² MoF, DoE 2018

²³ NITI Aayog 2019

²⁴ CII et al. 2019

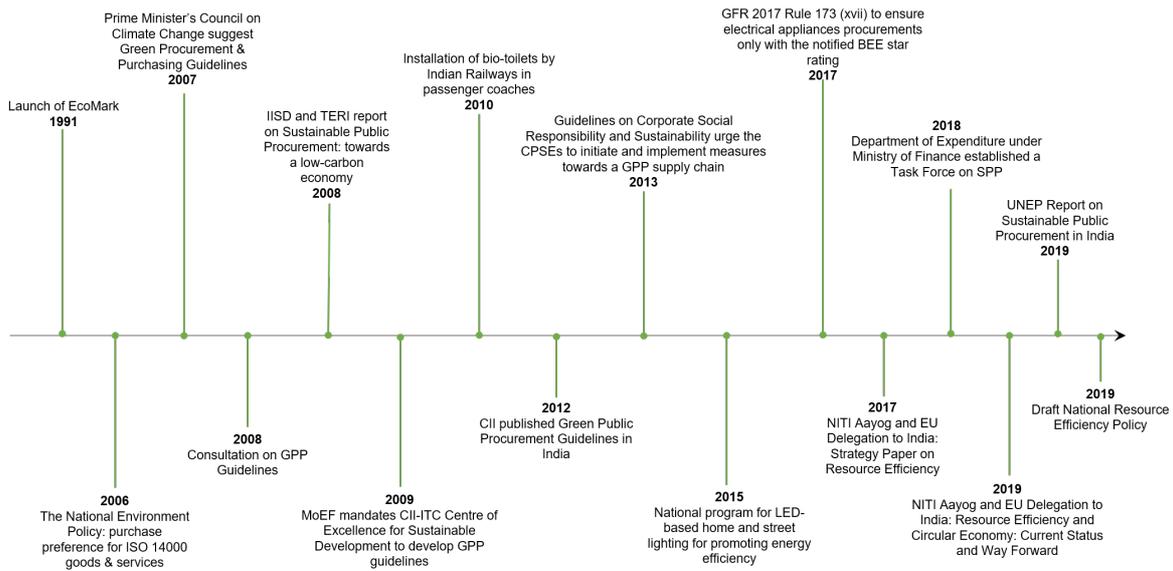


Figure 14: Timeline on various SPP related initiatives in India²⁵

2.1 SPP Initiatives in India's Public Sector

The practice of SPP in the public sector has not evolved in a systematic manner, but several public-sector entities (e.g., National Thermal Power Corporation (NTPC), Oil and Natural Gas Commission (ONGC)) and government ministries and departments (Energy, Railways, Tourism, Defence, Highways, Transport, Heavy Industries) have started considering environmental and energy efficiency criteria in their procurement decisions²⁶. Table 1 provides highlights of some of the SPP initiatives in the public sector in India.

Table 3: Highlights of SPP initiatives in India's public sector

Indian Railways (IR)	<p>IR has been one of the leading public sector organization in India that has taken interest on SPP. It has over the last decade undertaken several green initiatives such as sourcing solar energy, practicing wastewater recycling and water conservation, using biodegradable and compostable cutlery, just to name a few. It is also committed to meet a target to reduce 33% Greenhouse Gas (GHG) emissions by 2030 with 2005 as the base year by improving traction fuel and energy efficiency²⁷. In addition, IR has launched a Green Stations Initiative with the Confederation of Indian Industries (CII).</p> <p>Indian Railways has installed 82.42 MW Solar and 53 MW Wind power across Railway installations. Two solar power projects of about 2 MW each have been assigned to Bharat Heavy Electricals Limited (BHEL) at Sukhi-Siwania in West Central Railway (WCR) and to Railway Energy Management Company</p>
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²⁵ Adapted from: Hazarika, B., Jena, P. R. 2017

²⁶ CII et al. 2019

²⁷ The Economic Times 2017

	<p>Limited (REMCL) at Diwana in Northern Railways (NR). Vision 2020 document of Indian Railways has set the key target to utilize at least 10% of its energy requirement from renewable sources. Envisioning this, IR has planned to set up 1000 MW solar power plants, and about 200 MW of wind power plants by 2020-21 across Zonal Railways and Production Units. Of this, 500 MW solar plants are to be installed on the roof top of Railway buildings, which will be used to meet non-traction loads at Railway Stations, etc. About 500 MW land based solar plants will be used to meet both traction & non-traction requirements.</p> <p>The Government of India, through the Ministry of Renewable Energy, has set the agenda for the adoption of renewable energy through the five-year plan targets. The 12th Plan targets include 15,000 MW through Wind Power, 4000MW through Solar, 2000MW through biomass etc. totalling 30,000MW of capacity addition only through renewable sources. The 13th Plan targets (Year 2022) are equally ambitious. Indian Railways need to follow the national policy to contribute its own share to this plan. Indian Railways Organization for Alternate Fuel (IROAF) was established to explore the possibilities in proliferating new sources of Environment friendly Fuels / Energy in Indian Railways.</p>
<p>Kerala ban on the sale of Compact Fluorescent Lamps</p>	<p>Kerala Finance Minister TM Thomas Isaac Friday made an announcement in 2020 that the State will impose a ban on the sale of Compact Fluorescent Lamps (CFL) and incandescent (filament) bulbs starting as part of a sustainable energy policy. He also added that streetlights and bulbs in government offices across the state will be converted to light-emitting diode (LED) bulbs²⁸.</p>
<p>GAIL (India)²⁹</p>	<p>GAIL seeks to reduce the environment impacts of their procurement process and also encourages their suppliers to adopt sustainable supply chain practices. "Green Procurement" is an integral part of the sustainability initiatives and outlines GAIL's formal procedures and considerations for purchasing goods and services. GAIL ranks environmental sustainability as one of its top priorities and is committed to following responsible business practices by contributing to environmental protection and enhancing people performance by green procurement and services while ensuring business growth for its supply chain. GAIL has taken the following strategic initiatives towards procurement of energy efficient and sustainable products:</p> <ul style="list-style-type: none"> • Loading criteria in tenders for procurements of compressors or turbines or generators for fuel consumption/ star rating of electrical equipment • Green building concept in all new building projects • Compulsory buy back of old PCs, laptops, cartridges etc. by supplier providing such new items • Procurement of LED type new lighting and lighting fixture

28 Varma 2020

29 GAIL (India) Limited 2019

	<ul style="list-style-type: none"> • Automatic switching off the light in utility area to avoid extra consumption of power • Minimum 3-star rating in the specification while procuring electrical items • Air conditionings more than 10 years old to be replaced after doing a cost benefit analysis
NTPC³⁰	<p>As the country's largest power generator, with its presence across the energy value chain, NTPC recognizes that protecting the environment is essential for sustainable business. In the context of Environment Policy, the definition of environment covers all the domains of environment – Physical, Chemical, Biological and Socio- economic aspect. Hereby NTPC adopts the Environment Policy (2017), which supersedes the earlier policy document of 1995. Amongst other policies, NTPC has made provisions to adopt principles of green procurement by incorporating appropriate provisions in contracts and procurements.</p>
ONGC³¹	<p>ONGC Group is highly committed to ensuring that all their vendors and suppliers operate in a healthy and safe working environment while maintaining the quality of services. A systematic approach is deployed to ensure compliance with applicable labour practice regulations including child labour and human rights aspects, as well as compliance to applicable legal and HSE requirements and code of conducts are incorporated across their supply chain.</p> <p>ONGC Group encourages that their suppliers maintain effective policies, processes, and procedures to manage their environmental impact. Their supplier base is periodically rationalized based on performance and market requirements. They engage with their supply chain on a range of issues through various Business Partners' and Supplier's Meet from time to time.</p> <p>A dedicated Supplier Code of Conduct provides guidance on business aspects as well as ethical aspects of operations and for reporting any kind of violations.</p>
Indian Oil³²	<p>Amongst other sustainability initiatives, Indian Oil has created several initiatives on sustainable procurement. Following are few examples:</p> <p><u>Compressed Biogas (CBG)</u></p> <p>Indian Oil has been at the forefront of the Government of India's SATAT (Sustainable Alternative Towards Affordable Transportation) scheme aiming to produce automotive grade Compressed Biogas (CBG) from agricultural / sewage / organic waste generated in the country. Till 2019-20 end, Indian Oil had issued Letters of Intent to entrepreneurs for setting up 295 CBG plants with cumulative production capacity of 0.6 MMTPA of CBG. If these plant and</p>

³⁰ NTPC 2017

³¹ ONGC 2019

³² IOCL 2019

production capacities are achieved, the annual CBG sold would result in emission reduction of ~1,600 TMTCO_{2e}. During the year, Indian Oil started dispensing CBG from two of its retail outlets under the brand name “IndiGreen”, with several more retail outlets earmarked for dispensing CBG across the country.

Biodiesel from Used Cooking Oil (UCO)

Indian Oil is spearheading the Repurpose Used Cooking Oil (RUCO) initiative, which aims to produce biodiesel from UCO. Expression of Interest (EOI) has been floated for procurement of Biodiesel produced from UCO across 100 cities initially.

2G Ethanol

Indian Oil plans to set-up three 2G ethanol plants of 100 KL per day capacity each. These plants will generate ethanol from lignocelluloses biomass like paddy straw, wheat straw, cotton stalk, bagasse, etc. The company is currently setting up its first 2G ethanol plant in Panipat, Haryana. 2G ethanol plants

2.2 SPP Initiatives in India's Private Sector

Several Indian companies in the private sector have formulated Sustainable Procurement (SP) policies. These policies mandate that the suppliers meet the principles of SP rather than defining product specifications. Table 2 provides highlights of some of the leading companies in India’s private sector. Although these companies operate on a multi-national scale, the SPP rules are being followed in their operations in India. It may be observed that the SP policies of these companies focus more on sustainability requirements of the supply chain rather than specifying sustainability criteria for the products.

Table 4: Highlights of SP policies in India’s private sector

Company name	Key Elements of Sustainable Procurement Policy
Mahindra ³³	Encourages suppliers to deliver products/services with minimal negative impact on environment and adopt safe practices in the cycle from production to delivery. Prefers products that are eco-friendly, energy efficient and less polluting.
Tata Group ³⁴	Tata companies are actively engaging with their supply chain partners on Environment, Social Governance (ESG) issues through dedicated policies, guidelines, and codes of conduct. The engagement goes beyond audits and assessments and focuses on supporting value chain partners in enhancing their sustainability performance through capability building and knowledge sharing. In addition to working with suppliers, companies are also focusing on sourcing materials that are conflict-free and sustainable in nature. Tata Consumer

³³ Tech Mahindra 2020

³⁴ TATA Sustainability Group 2021

	Products is committed to sustainable beverage production and consumption. As of mid-2019, all the tea sourced for Tetley in their International Business and Tetley Green Tea in India is 100% Rainforest Alliance certified.
Godrej Industries³⁵	Published Sustainable Procurement policy in 2017. Policy goes beyond mere compliance with the law by drawing upon internationally recognised standards in order to identify and define best practices from across the globe. Accordingly the procurement is influenced.
Clariant³⁶	Suppliers may be asked to fill out a self-assessment form. This has already happened for specific geographic areas and will be extended where relevant to other regions in the future. Further measures will be defined based on the response and the defined risk profile for the supplier. Audits will be performed at the site, if needed. For suppliers that do not meet Clariant's requirements for responsible dealings, corrective actions will be discussed with the supplier.
Loreal³⁷	Group has adopted a sustainable supply policy for renewable ingredients. To ensure that these principles are being respected, they carry out audits of suppliers throughout the period of their partnerships. These audits are performed as frequently as possible and, to guarantee their quality and efficiency, they are conducted by an independent third party.
Alstom³⁸	Alstom has created a dedicated Sustainable Sourcing Policy including an Ethics and Sustainable Development Charter for Alstom's Suppliers and Contractors. Alstom has set the objective that all its suppliers and contractors commit to respecting this charter. To ensure suppliers meet these environmental, social and ethical criteria, Alstom works with EcoVadis ³⁹ to carry out sustainable development performance evaluations based on the United Nations Global Compact and ISO 26000 standard.
Unilever	Since the early 1990s, Unilever has pioneered a number of programmes and initiatives designed to drive the highest standards of sustainable sourcing within their operations and supply chain, developing them alongside wider industry and multi-stakeholder initiatives. These programmes and policies, notably the Unilever Sustainable Agriculture Code and Responsible Sourcing Policy (RSP) ⁴⁰ . RSP includes a set of Mandatory Requirements, which all of Unilever's suppliers need to meet to be able to do business with Unilever. Unilever will verify alignment to and implementation of the RSP's Mandatory Requirements through the use of supplier self-declaration, online assessments and – for designated high-risk countries and supplier types – independent verification including third-party audits ⁴¹ .

35 Godrej Industries (Chemicals) 2017

36 Clariant 2021

37 L'Oréal 2021

38 Alstom 2021

39 Ecovadis 2021

40 Unilever 2021

41 Unilever 2017

Lenovo⁴²	The company has implemented sustainability programs across their full supply chain. This includes but is not limited to programs on supplier employee working conditions, environmental footprint and use of environmentally preferred materials. All suppliers are to comply with Lenovo's Supplier Code of Conduct ⁴³ via contractual terms and conditions, and they assess conformance to these requirements in making procurement decisions. Lenovo uses over 25 key indicators to measure supplier transparency, commitment, and performance. The results are utilized in overall supplier performance reporting and are key factors in decisions on future business volumes. Similar programs are implemented in the internal manufacturing and logistics operations as well as with packaging materials.
HP⁴⁴	Supplier sustainability requirements apply to any supplier doing business with HP. The requirements are part of any contract with an HP legal entity that obligates a supplier to comply with HP's sustainability requirements or policies, including the Supplier Code of Conduct. Suppliers need to fill a self-assessment form as well as sign HP's Supplier Sustainability Agreement.

2.3 Enabling Initiatives

MoEF launched in 1995 the Eco-mark label to help promote Green Procurement. Unfortunately, Eco-mark failed in its acceptance. There are now attempts at Central Pollution Control Board (CPCB) to revisit Eco-Mark. As per office memorandum released in 2013, all ministries and departments need to purchase electrical appliances with a specific BEE star rating as prescribed by the government⁴⁵. Additionally, in 2017, GoI introduced the GFR 2017 Rule 173 (xvii) to ensure electrical appliances procurements only with the notified BEE star rating.

In the Draft Policy for Resource Efficiency released in 2019, there have been provisions made to encourage green public procurement including products manufactured from recycled scrap materials, use of recycled materials etc. In the last two decades CII came up with several green rating and labelling schemes that have influenced the market. Some of these initiatives are described below.

GreenCo Rating was developed by CII and is a holistic framework that evaluates companies on the environmental friendliness of their activities using a life cycle approach. Implementation of GreenCo rating provides leadership and guidance to companies on how to make products, services, and operations greener. Industry personnel are trained on the latest Green concepts and facilitated for implementing better systems and implementing global best practices in green. The Green Company Rating System advocates a performance-based approach. GreenCo rating is applicable to both manufacturing facilities and service sector units. The rating is implemented at unit or facility level. The unit or facility must be in operation for a minimum period of 3 years. In case of new plants/ facilities minimum 2 years operation is required⁴⁶. In 2019, 347 companies were registered, and 260 companies have been rated and received certification from GreenCo.

⁴² *Lenovo 2021*

⁴³ *Lenovo 2016*

⁴⁴ *HP n. d.*

⁴⁵ *MoF, DoE 2013*

⁴⁶ *GreenCo rating System 2019*

Application of GreenCo rating addresses national priorities leading to benefits, such as energy efficiency, water conservation, renewable energy, waste management, green supply chain, etc⁴⁷.

- The Green Company Rating System encourages businesses to employ clean and renewable energy. The goal is to offset 100% of the electrical energy / thermal by renewable energy
- The rating system promotes reuse and recycling of raw materials and discourages use of virgin materials. It even goes a step further in encouraging businesses to ensure that not only they reuse/ recycle raw materials, but their product too should be recyclable/ biodegradable
- The green rating system aims to make businesses aware of these benefits to their bottom-line so that they are encouraged to implement green supply chain processes
- The rating system encourages businesses to design and develop a product that has 'Nil/Least' environmental impact (CO₂, Water, material, and toxic content) during its lifecycle. It guides businesses to perform a comprehensive analysis of all their products on environmental impacts over the lifecycle of the product and explore options for reducing such impacts

GreenPro, also developed by CII, is a Type – 1 Ecolabel which enables the end users in the building sector and manufacturing sector to choose sustainable products, materials, and technologies for reducing the environment impacts during the construction, operation and maintenance of their buildings and factories. GreenPro Ecolabel is accredited by Global Ecolabelling Network (GEN) through GENICES – GEN's Internationally Coordinated Ecolabelling System. A product which bears GreenPro Ecolabel has lower environment impacts and contributes significantly for enhancing the performance of Green Buildings and Green Companies. GreenPro empowers end users with product sustainability information and steers them towards purchasing of sustainable products⁴⁸. So far more than 1500 products from about 123 companies have been certified by CII under GreenPro⁴⁹.

Benefits for Product Manufacturers⁵⁰:

- Supports inclusion of the certified products to complement National & International Green Building Rating systems
- Easier to convince Green building architects, developers, corporates, and consultants
- Differentiates the Green product from the competition
- Enhances the market reach with credible and precise information on the Green features
- Enables Green product innovation

CII-IGBC with the support of Environment Directorate of Indian Railway has developed the Green Railway Stations rating system. IGBC Green Railway Stations rating system is a voluntary and consensus-based programme. IGBC Green Railway Stations rating system is the first of its kind holistic rating in India to address environmental sustainability in Indian railway stations. The overarching objective of the rating is to facilitate adoption of green concepts, thereby reduce the adverse environmental impacts due to station operation & maintenance and enhance the overall commuter experience at station. The rating system will help the station management to understand their present

⁴⁷ CII 2018

⁴⁸ GreenPro 2019a

⁴⁹ GreenPro 2019b

⁵⁰ Indian Green Building Council 2015b

position with respect to the 'green performance' of the station and the measures that need to be taken to enhance the performance on a continual basis⁵¹.

Finally, the Guidance Manual under GFR of 2017 allows for preferential purchase of environmentally friendly goods. It lists provisions to include environmental concerns when defining the need of products, framing specifications, use of ecolabels and voluntary environmental standards, and the use of Environmental Management Systems such as ISO 14001 as pre-bid criteria and the use of environmental characteristics apart from quality, price, technical merit, aesthetic, and functional characteristics as bid evaluation criteria.

2.4 Gaps and Challenges

The critical issues facing greater uptake of SPP in India include lack of political support; the absence of a clear legal mandate and guidelines; a lack of knowledge amongst procurement professionals to avoid legal and technical problems during the procurement process (inclusion, evaluation and monitoring); limited knowledge of and experience in using tools such as LCC and LCA; a dependency on experts to define specifications; and the perceived higher costs of greener products. Implementation of SPP/GPP in practice would require not only laws and guidelines, but also a change in attitude amongst producers and consumers. A shift towards understanding that spending public money is an opportunity to foster sustainable development and spurring innovation is needed⁵².

The paper: Sustainable management at Indian Railways: how a self-evaluation tool for barrier analysis facilitates green procurement⁵³, describes the application of the barrier analysis and, subsequently, how barrier analysis can raise awareness, facilitate the establishment of structures, and thereby advance the green procurement activities of an organization. Certain barriers identified in the barrier analysis have been removed; but many of them still remain, which are hampering the adoption of sustainable management, especially adoption of SPP Policy supported by principles and procedures. In specific, although the GFR encourages that environmental considerations should be included in the evaluation criteria for the selection of the best bid, guidelines on how to apply such frameworks of evaluation are not currently available. For this, there will be a need to obtain information on the environmental and social impacts of the products across the lifecycle. Capacity building is needed for procurement officers with guidance manuals, specification, and bidding documents⁵⁴.

In order to introduce SPP, Indian Railways may have to look into some reorganisation. Presently the environmental management and housekeeping division looks after the sustainability related initiatives and the procurement division operates independently with not much intersection. If not harmonised, then implementation of SPP could pose a challenge.

According to the Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2018, every Central Ministry /Department / PSUs shall set an annual target for 25% procurement from MSE Sector. However, it may be difficult for MSMEs to meet the sustainability criteria of certifications. Care will have to be taken to ensure that in introducing SPP, the MSME sector is not disadvantaged.

51 *Indian Green Building Council 2015a*

52 *UNEP 2013*

53 *Guenther et al. 2017*

54 *Guenther et al. 2017*

3. INTERNATIONAL SUPPORT TO SPP DEVELOPMENT IN INDIA

3.1 United Nations Environment Programme (UNEP) Initiatives

The **UNEP Sustainable Public Procurement Programme (SPP)** provides policy support to several countries, including India. The supporting actions are carried out in terms of SPP guidelines⁵⁵, SPP policy design and implementation, a SPP Training Toolkit⁵⁶ that can be obtained via the UNEP SPP team, as well as technical assistance. It's involvement in the SPP areas dates back to 2005, when joining the Swiss-led Marrakech Task Force on SPP. Through its participation in the **One Planet Network SPP Programme** (formerly 10YFP), the UNEP SPP Programme promotes the implementation of SPP on a global level. The programme is co-led by UNEP and is a cooperation between key stakeholders. It aims at promoting and accelerating the implementation of sustainable public procurement on a global level by better understanding SPP benefits and impacts. With regards to support that specifically addresses India and its needs, UNEP carried out various supporting measures. A training program for Indian Railways on Environmental Management and Sustainability was supported by UNEP and included a session on SPP. Furthermore, UNEP funded a scoping study on the identification of products for piloting SPP for the Ministry of Finance. In addition, UNEP is currently supporting a SPP officer within the office of GeM for one year (from February 2020 onwards). UNEPs supporting activities carried out specifically under the umbrella of the program **Partnership for Action on Green Economy (PAGE)**, are depicted in the table below.

Table 5: PAGE - Partnership for Action on Green Economy

Name	Partnership for Action on Green Economy (PAGE)⁵⁷
Funding Organisation	UNEP
Implementing Organisation(s)	UNEP
Duration	since 2018

India joined the PAGE programme in 2018. One year later, India's Draft National Resource Efficiency Policy was published⁵⁸. With the support of PAGE, a high level **Task Force on Environmental Sustainability** was formed in 2019. It is chaired by the Chairman of the Railway Board and co-chaired by UNEP. The goal is to provide guidance on the planning and supervision of a sustainability roadmap for Indian Railways and to support IR in achieving its green transition. With regard to financial support, India benefitted from a UNEP grant that financed a prioritization study focussing on paper, air conditioning and cleaning products⁵⁹. As part of the study, preliminary sustainable purchasing criteria were developed.

⁵⁵ UNEP DTIE 2012

⁵⁶ UNEP 2020

⁵⁷ PAGE 2020

⁵⁸ Ministry of Environment, Forest and Climate Change, Government of India 2019

⁵⁹ CII et al. 2019

Furthermore, a newly created position to support the UNEP office in India was recently staffed (December 2020). The SPP expert is supposed to draft a National SPP action plan for India and support UNEP in engaging with GeM, MoEFFC and the task force in SPP. The position is affiliated with the Norway funded project on **Supporting SPP Implementation in India and Asia Pacific Region**.

3.2 SWITCH-ASIA Initiatives

The **SWITCH-Asia Programme** has three different components: the **Regional Policy Advocacy** implemented by UNEP, the **Sustainable Consumption and Production Facility** implemented by the GIZ, adelphi and the Institute for Global Environmental Strategies (IGES), and the Grants Programme managed by the EU. Through these initiatives, SWITCH-Asia aims to promote sustainable development, contribute to economic prosperity and poverty reduction in Asia, and support the transition to a low-carbon, resource-efficient and circular economy. Within the Regional Policy Advocacy Component a [Leadership Academy on Circular Economy \(CE\)](#) was carried out with significant participation from Indian professionals. This regional initiative focussed on communication and behavioural change in CE and was conducted in December 2019⁶⁰. The following table lists further support that is specifically targeted at India.

Table 6: India SCP Multi-Stakeholder Consultation

Name	India SCP Multi-Stakeholder Consultation⁶¹
Funding Organisation	European Union
Implementing Organisation(s)	SWITCH-Asia and Development Alternatives Group
Duration	28th August 2018

The **multi-stakeholder consultation** was launched to discuss policy and practice issues and to mainstream Sustainable Consumption and Production (SCP) approaches in India. Government representatives, policy makers, banks and businesses participated in the event.

One of the outcomes of the workshop: Indian businesses and industry are beginning to engage with the concept of circular economy and voluntarily initiate practices. Thus, the consultation group agreed that MSMEs need to be more involved to support a transition towards a resource resilient nation.

3.3 Other Initiatives

International initiatives supporting the SPP development in India and that are carried out by other organizations are illustrated in the tables below.

⁶⁰ Leadership Academy on Circular Economy, SWITCH-Asia 2019

⁶¹ One Planet Network 2020a, SWITCH-Asia 2018

Table 7: Technical Assistance to the Indian Resource Efficiency Initiative

Name	Technical Assistance to the Indian Resource Efficiency Initiative
Funding Organisation	European Union
Implementing Organisation(s)	Adelphi, Confederation of Indian Industry (CII), Gesellschaft für Internationale Zusammenarbeit (GIZ), The Energy and Resource Institute (TERI)
Duration	2017 - 2020

Within the framework of the **EU-India Resource Efficiency Initiative (EU-REI)**, adelphi, together with its partners, prepared two sectoral studies. In the first study **Fostering Resource Efficiency in the Indian Building and Construction Sector**⁶² one suggested key action to drive resource efficiency is to increase the use of more locally sourced sustainable resources and recycled products as building materials. This action needs to be supplemented by awareness raising, capacity building and promotion campaigns, where local procurement of green products can be endorsed as well.

With the introduction of the Plastic Waste Management Rules and E-Waste Management Rules in 2016, the Indian government reaffirmed the importance of Extended Producer Responsibility (EPR) as a central policy approach to manage the country's growing amounts of waste. This is the main subject of the second study **Enhancing Resource Efficiency through Extended Producer Responsibility – Sector Study on Plastic Packaging and E-Waste Management in India**⁶³. One suggested key action to increase the market penetration of resource efficient products and materials, is to develop and apply GPP criteria for circular and resource efficient materials. During various stakeholder consultations it was pointed out that GPP can be a useful tool to create the much-needed pull effect for resource efficient products. A first step, which could be undertaken by the Indian government is to develop specific criteria that relate to resource efficiency and circular economy. The study also stresses, that in order to fully harness the resource efficient potential of GPP in India, the development of criteria needs to be accompanied by targeted capacity building measures for procurement managers and the federal and state level.

In addition to the above-mentioned studies, a new training programme on resource efficiency and circular economy has been launched in November 2020 in the framework of the EU-REI. The programme also includes training modules on GPP.⁶⁴

62 Restle et al. 2018

63 Hemkhaus et al. 2018

64 adelphi 2021

4. RECOMMENDATIONS

For the purpose of this paper and the development of an SPP action plan following this work, the project team defines recommendations that are relevant for IR.

The recommendations resulting from Chapters 2 and 3 are:

- IR could use the provisions listed in the Guidance Manual under GFR (of 2017) for the implementation of SPP.
- IR may consider using GreenPro requirements in tendering as there are now a large number of GreenPro certified suppliers available in the market. It may consider GreenCo certification as mandatory for all its major suppliers.
- With regard to the identification of priority products / services: IR could adopt and modify the product selection as well as the criteria developed in the prioritization study (see table 3), conducted within the PAGE programme. Requirement of having a GreenPro certification could also be considered.
- Alternately, IR may consider including sustainability criteria in the scoring scheme with weights given on vendor (e.g. whether GreenCo certified) or product (e.g. whether GreenPro certified).
- IR may consider the use of more locally sourced sustainable resources and recycled products by increasing the share of (local) MSMEs in the procurement process. In addition, the measures taken by IR to increase the share of MSMEs participating in public bidding processes in 2012 (see table 4), can be pursued as key action points in the framework of the action plan. Similarly, the SCP multi-stakeholder consultation (see table 5) came to the conclusion that MSMEs need to be more involved in GPP in order to support a transition towards a resource resilient nation. Hence, the action plan for IR can cover these aspects, in terms of a sustainable policy, to ensure that MSMEs are able to contribute their (innovative and green) products and services in the GPP bidding process. IR could support the actions by awareness raising and capacity building, where in particular local procurement of green products can be endorsed.
- Thus, IR may develop specific criteria, which particularly relate to resource efficiency and circular economy. It is important that for implementation of SPP, training programs for building capacities within IR and for building readiness in the market will be conducted on a programmatic basis.
- IR could participate in and contribute to the training programme on resource efficiency and circular economy that was recently initiated in the framework of the EU-REI programme (see table 6). New training workshops are planned from 2021 to 2023.
- Awareness program on SPP for procurement officers has been conducted at NAIR in October 2020. A more hands on program may be conducted as a follow up in April, 2021. In addition, a short program on understanding of SPP should be conducted for vendors, especially the MSMEs.

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SECTION 3

ACTION PLAN

Dr. Prasad Modak, Sivaranjani Subramanian, Walter Kahlenborn, Kathrin Kohl



List of Abbreviations

APEC	Asia-Pacific Economic Cooperation
ASSOCHAM	The Associated Chambers of Commerce and Industry of India
BEE	Bureau of Energy Efficiency
CII	Confederation of Indian Industry
CNG	Compressed Natural Gas
COP21	21st Conference of the Parties
CSR	Corporate Social Responsibility
DEMU	Diesel Electric Multiple Unit
DFPR	Delegation of Financial Powers Rules
EMC	Environmental Management Centre LLP
EMS	Environmental Management System
EU	European Union
FICCI	Federation of Indian Chambers of Commerce & Industry
GDP	Gross Domestic Product
GFR	General Financial Rules
GPNI	Green Purchasing Network India
GPP	Green Public Procurement
INDC	Intended Nationally Determined Contribution
IR	Indian Railways
ISO	International Organization for Standardization
KEITI	Korea's Environmental Industry & Technology Institute
MOU	Memorandum of Understanding
MPG	Manual for Procurement of Goods
MRV	Monitoring Reporting & Verification
MSME	Ministry of Micro, Small and Medium Enterprises
MW	Mega Watts
NAIR	National Academy of Indian Railways
PAT	Perform, Achieve and Trade
POH	Periodic Overhaul
PSS	Public Procurement Service
PU	Public Utilities
REI	Resource Efficiency Initiative
RSDO	Research Design and Standards Organisation
SCP	Sustainable Consumption & Production
SME	Small Medium Enterprise
SPCB	State Pollution Control Board
SPP	Sustainable Public Procurement
TERI	The Energy and Resources Institute
UNEP	United Nations Environment Programme

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1. INTRODUCTION

With India's public procurement estimated to account for around 20 to 22 %⁶⁵ of GDP, the Indian government has immense purchasing power. Hence, it can use this to stimulate the provision of greener products and services. Additionally, it can provide a role model for businesses and consumers alike when it comes to sustainable purchases.

Currently, there is no central law that governs public procurement in India. Guiding principles of efficient, economical, fair and equitable public procurement are provided in the General Financial Rules (Ministry of Finance). With regard to SPP and the consideration of environmental and social criteria there are various initiatives, regulations and laws that have been released over the years, dating back to the year 1991 (launch of EcoMark). However, the implementation of SPP actions in India has not yet evolved in a systematic manner.

Indian Railways (IR), as one of the leading public sector organizations in India, has already taken various steps towards environmentally friendly purchasing and has emphasized to reduce carbon emissions in its Vision and Mission 2020. The development of this SPP action plan is one of the key actions to pave the path towards sustainable procurement of public goods and services in India, with the Ministry of Railways as one of the central ministries in the country.

Against this background, the aim of this action plan is to provide options for the strategic alignment of implementable SPP actions for IR in the short-, medium- and long-term future. All actions described in the upcoming chapters will serve as a basis for a detailed implementation guide to be developed. The implementation guide will consist of a work programme defining sets of activities. It will specify roles and responsibilities of the government and other relevant entities and will set a time frame for each activity.

The action plan consists of seven chapters. Chapter 1 presents the objectives and scope of the action plan. Chapter 2 provides background information with regard to the legal background as well as the vision and mission of IR. Chapter 3 describes short- and long-term objectives and strategies, including proposals on target values.

The short-term actions are provided in Chapter 4, which consists of 6 sub-chapters. Chapter 5 presents the long- and medium-term actions, consisting of 5 sub-chapters. The concluding Chapter 6 presents a forecast and the way ahead for SPP at IR.

⁶⁵ MoF 2019

2. BACKGROUND

There is no central legislation exclusively governing public procurement in India. A few states like Tamil Nadu, Karnataka, Andhra Pradesh, Assam and Rajasthan have enacted state-specific legislation that govern the procedure for procurement. However, none of these legislations introduce environmental performance as criteria in public procurement.

In the absence of a comprehensive law, General Financial Rules (GFR) issued by the Ministry of Finance are followed as a set of guiding regulatory principles for public procurement. The GFR have the following provisions to facilitate the procurement of sustainable products by public sector⁶⁶

- Rule 173 (xi) Criteria for determining the responsiveness of bids should consider elements such as performance/efficiency/environmental characteristics.
- Rule 136 (iii) While designing the projects, principles of Life Cycle cost may also be considered
- Rule 173(xvii) Ministries or departments while procuring electrical appliances shall ensure they carry the notified threshold or higher Star Rating of BEE

In addition, the Manual for Procurement of Goods, 2017 (MPG) contains guidelines for the purchase of goods and addresses energy, environment and compliance related expectations. The Delegation of Financial Powers Rules, 1978 (DFPR) allows specifications for the acquisition of environmentally-friendly products through the use of ISO 14020 or voluntary environmental standards (as per clause 2.2 Technical specifications ix).

The Department of Expenditure (DoE), Ministry of Finance Office, constituted a Task Force on Sustainable Public Procurement (SPP) in 2018 to finalize the procedure for public procurement⁶⁷. The Task Force recommended seven product categories, including public works (brick, steel, and cement), electrical appliances, information technology (computers & peripherals, photocopiers, telecom), pharmaceuticals (bulk drugs), paper, office furniture, and lighting. These products categories were chosen based on their environmental impact (from production, use, or disposal), volumes in use, and their significant share of public spending.

2.1 Vision, Mission and Policies at Indian Railways

IR set up the Environment and Housekeeping Management (EnHM) Directorate in the Railway Board in January 2015 to coordinate all environment management initiatives across the Indian Railways. The Vision and Mission of this directorate are given in Table 1.

⁶⁶ MoF, DoE 2017

⁶⁷ MoF, DoE 2018

Table 8: Indian Railways Environment Directorate - Vision & Mission

Vision

To promote Green environment and clean energy while making the Indian Railways a global leader in sustainable mass transport solutions

Mission

- To promote energy conservation measures.
- To maximize the use of alternate forms of clean energy, thereby minimizing the carbon footprint of Railways.
- To provide a clean and hygienic environment for customers.
- To promote conservation of water and other natural resources.
- To march towards Zero waste discharge from the major Railway units.
- To promote Green built-up spaces and expand tree-cover.
- Building in house capacity to set up an effective Environment Management System.

Following the setting up of Vision and Mission, IR has taken steps to streamline its initiatives in environmental management with interventions in Energy Efficiency, Renewable and Alternate sources of Energy, Water Conservation, Afforestation, Waste Management and Green Certifications.

Currently, there is no SPP policy at IR. Despite no direct mandate to procure sustainable products, IR has gone ahead and integrated environmental and social concerns in procurement decisions aligning with their mission. The Table 2 describes these initiatives.

Table 9: Green Policy & Initiatives of IR

1. Policy and actions on Water Management

- Water Recycling plant to be provided at major water consumption centres subject to techno-economic viability
- Rainwater harvesting system to be provided
- Water audit to be done at major water consumption colonies / installations /stations
- Revival of water bodies
- Inclusion of Automatic Coach Washing Plant with Water Recycling in all major coaching depots

2. Policy and actions on Energy Management

- 10% energy consumption to come from alternative sources
- Retrofitting with efficient lighting and other star-rated appliances
- Production of only energy efficient 3 phase electric locos from 2016-17 onwards

- Provision of LED lights in coaches during POH
- Use of 5% biodiesel in traction fuel
- 20% CNG substitution in DEMUs
- 100% Green Powered Stations started
- Certification to EMS 50001 Energy Management System
- IR has joined the Perform, Achieve and Trade (PAT) Programme of Bureau of Energy Efficiency (BEE) showing its commitment for improving energy efficiency

3. Policy and actions on Waste Management

- IR shall convert all existing coaches fitted with conventional toilets to those fitted with environment-friendly bio-toilets by 2019
- Provision of dustbins in sleeper coaches also in addition to AC coaches
- Provision of dustbins in bio-toilets in all coaches
- Provision of separate dustbins for bio-degradable and non-bio-degradable waste and more dustbins at stations
- Pilot Plants for Solid Waste Management at major railway station

4. Policy and actions on Funding of Environmental Sustainability Works

- Policy framework to earmark 1% lump sum provision in all works/project estimates towards environment related works has been issued and this has been made part of D&G charges of estimates
- Policy framework to undertake environmental sustainability works by Zonal Railways through CSR has been put in place

5. Other Green policy and initiatives

- MOUs with States for planting of trees on vacant railway land
- Use of plastics of less than 20-micron thickness in packaging is banned
- EMS/IMS certification for all PUs, Workshops, Loco Sheds and major Coaching and Wagons Depots
- Green Certification of Railway establishments
- 37 major Railway Stations will be certified for implementation of Environment Management System to ISO 14001 in 2018-19
- 'Consent to Establish' and 'Consent to Operate' / 'Consent for Operation' for sidings and goods sheds to be taken from State Pollution Control Board in accordance with the provisions of SPCB, keeping in view the notified areas /air pollution control areas and categorisation of Industrial Sectors

2.2 Alignment with National Environmental Policy, Policy on Resource Efficiency and INDC

The Government of India, as part of its Intended Nationally Determined Contributions (INDC) to the Paris Agreement, has set a target of 33% emissions intensity reduction, with the transport sector being one of the key sectors with substantial mitigation potential. Being the most sustainable mode of transport, the Government of India at COP21 agreed to increase the share of Indian Railways in the movement of freight from the current ~ 35-36% to 45% by 2030.

The government of India, through the Ministry of Renewable Energy, has set the agenda for adoption of renewable energy through the five-year plan targets. The Vision 2020 document of Indian Railways has set the key target to utilize at least 10% of its energy requirement from renewable sources. Envisioning this, Indian Railways has planned to set up 1000 MW solar power plants, and about 200 MW of wind power plants by 2020-21 across Zonal Railways and Production Units⁶⁸. Of this, 500 MW solar plants are to be installed on the roof top of Railway buildings which will be used to meet non-traction loads at Railway Stations, among others.⁶⁹

The Indian Railways is approaching an increase in its productivity with a low carbon growth strategy. It has committed to several initiatives toward combating climate change and mitigation of global warming. The measures include electrification of the railways, improving energy efficiency of locomotives, trains, and fixed installations, acquiring green certification for stations/installations, fitting bio-toilets in coaches, and switching to renewable sources of energy.

⁶⁸ Ministry of Railways 2020

⁶⁹ Economic Times 2020

3. OBJECTIVES AND STRATEGIES

Creating an action plan is a key part of implementing SPP. The action plan is guided by a set of objectives and strategies that provides a clear direction towards implementation. The objectives describe the sustainability impact and also help to measure the progress towards SPP adoption.

The action plan leverages on several green initiatives undertaken by IR. The plan will also detail out the implementation of a pilot, market engagement plan, the introduction of sustainability in the procurement cycle and a monitoring plan.

The short term and long-term objectives of the SPP action plan are listed in the sub-sections below.

Short-term objectives:

- Increase SPP in prioritised products and services, which are in large volumes and environmentally critical in their resource consumption and adverse impacts
 - Develop a prioritisation criterion to analyse the procurement statistics of IR.
 - Make provisions to conduct a market study to determine the availability of green products and services as well as the market readiness for SPP policies.
- Awareness for Procurement Officers as well as other stakeholders
 - Promote importance of SPP amongst key stakeholders i.e. procurement staff in Indian Railways, vendors, as well as passengers.
 - Align SPP with the vision, mission, policies, and sustainability related initiatives of Indian Railways.
- Spur innovation so that new products and services meet sustainability criteria
 - Prepare Indian Railways to implement active vendor engagement initiatives, promote eco product fairs, engage with resource Institutions.
- Creation of Sustainability Criteria
 - Create an evaluation framework using normative and scoring based methods.
- Creation of Vendor Shortlisting Criteria
 - Prepare standard operation procedures for procurement officers to shortlist vendors based on the product and service quality as well as sustainability qualifications.
- Screening and assessment in procurement of products and services
 - Screening might be based on exclusions
 - Assessments based on eco-labels
- Formulation of framework for conducting impact assessment
- Creation of required documentation

Long-term objectives:

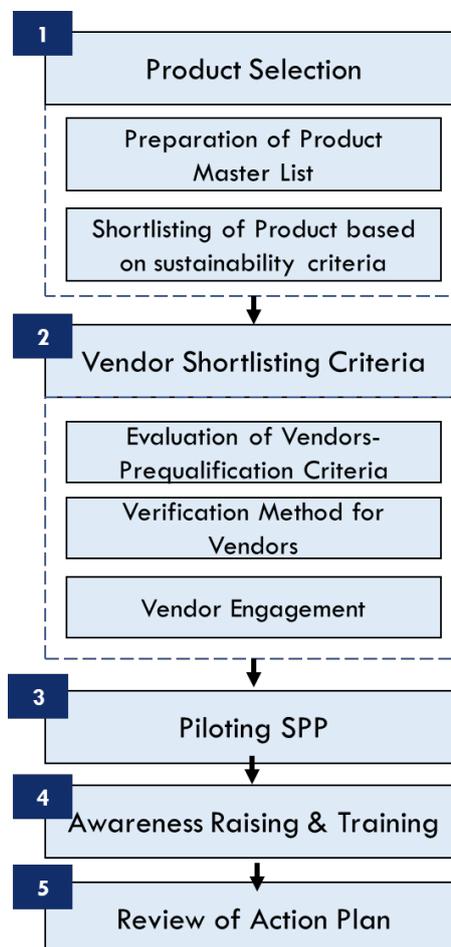
- Upscaling SPP
 - Develop procurement criteria for additional product and services.
- Guidelines for the implementation of SPP including organisational structure
 - Prepare guidelines for the implementation of SPP, including sustainability in decision making.
 - Apart from international experiences, emphasis will be given to the various sustainability procurement guidelines created by multinational organisations.
- Capacity building on SPP of procurement officers
 - Plan and conduct an awareness training program on SPP for procurement officials in IR. A more advanced training program can be detailed out once the SPP process reaches a definitive stage.
 - Identify steps to create a Centre of Excellence for SPP at NAIR.
 - Recommendations of international collaborations with other railway systems.
 - Restructuring guideline of organisation at Indian Railway to upgrade environment management as well as smoothly implement the strategic action plan for capacity building.
- Vendor support and management
 - Organise annual events for vendor engagement.
 - Provide assistance to SMEs to meet the sustainability criteria.
- Monitoring and impact assessment
 - Build further based on the actions developed for the short-term objectives and make an application to assess the impact of implementation.
 - Develop assessment process for environmental, social and economic impact.
 - Consider integrating existing green product certification systems such as GreenCo and GreenPro by Confederation of Indian Industry.
- Adaptation of the SPP action plan.
- Provide feedback to the task force at the Ministry of Finance for incorporating any adaptation changes in procurement bill

4. DESCRIPTION OF SHORT-TERM ACTIONS

4.1 Introduction

The short-term actions are designed to have an immediate effect and also form a base for achieving long-term actions. Short-term actions would include all activities, which need to be implemented immediately within 0-3 years. These actions include setting targets, priorities, timeframe, list of prioritized products/services, creating a vendor selection criterion, piloting SPP, conducting general awareness and training programs and identification of teams responsible for implementation (see Figure 1). The short-term actions would also be aligned with the existing initiatives of IR's Environment Directorate for easier implementation.

Figure 1: Short term actions



4.2 Product selection (Scoping and Identification of Priority Products)

The central element of SPP is the procurement of environmentally friendly products. When introducing SPP into the procurement practices, the identification and selection of products according to specific criteria are one major prerequisite. The present action plan essentially aims at pushing IR's sustainable procurement of products and services forward. For this purpose, it needs to be determined which products should be considered for improving the product's characteristics with regard to their environmental and social impact.

The identification and selection of priority products is a two-steps process. The first step will be the development of a master list of products that could be relevant for SPP. For this first step the annually procured quantity, the environmental impact and the respective expenditures (i.e. demand) for the products should be considered. At this stage, no quantitative environmental impact calculations are required, but rough estimates are sufficient. In the subsequent step a more detailed evaluation is required. This step aims at developing a short list of products, by carrying out an evaluation based on various criteria, e.g.: a) the estimated environmental impact (i.e. considering production, usage and disposal phase), b) the market readiness (i.e. market can provide environmentally friendly products), c) cost implications (i.e. considering acquisition, usage and disposal costs), d) practicability with regards to green criteria (i.e. quantifiable and verifiable criteria), e) compliance with environmental policy (i.e. alignment with government's strategies on e.g. climate protection), f) support to local economy (i.e. local production and trading). The various criteria also contain market engagement activities that enable to identify potential vendors and help to build their capacities to meet the sustainability requirements. Engaging the market can build trust with suppliers and can inform about the pursued change in the procurement and contract process (towards SPP).

For the development of the short list and the application of the evaluation criteria, various stakeholders at IR need to be involved. For specific questions on the environmental impacts of a product, (external) experts can be consulted. In any case, it will be worthwhile to select a small range of products to focus on, when first pilot activities will be implemented.

A first prioritization of products on a national level has already been conducted by the Confederation of Indian Industry (CII) and The Energy and Resources Institute (TERI) under the guidance of UNEP in 2019.⁷⁰ This selection can provide a good first orientation on the selection of products and the choice of evaluation criteria for Indian Railways (see Chapter 4.3 for more details).

4.3 Vendor Shortlisting criteria

Developing vendor shortlisting criteria should be based on the targeted sustainability criteria of products and services. The basic approach for developing the vendor shortlisting criteria stems from the 'Common Core Criteria' developed by Green Purchasing Network of India (GPNI)⁷¹. Among the eight common core criteria developed, three are applicable to the vendors forming the pre-qualification criteria.

Pre-qualification criteria involves evaluating a vendor's approach to meeting the SPP aspects of a contract, the performance of their own business in terms of sustainability, and the sustainability of their

⁷⁰ UNEP 2019

⁷¹ The Framework towards Standardized Assessment Criteria for Eco Products and Eco Services was developed by the Green Purchasing Network India (www.gpnindia.org) to propose a framework towards developing harmonized criteria as applicable to products and services.

supply chain. The vendors will be assessed based on their compliance with environmental legislation and adherence to national social regulations and standards.

The sustainability criteria for vendors will vary according to the market readiness assessment carried out in previous product selection steps. Relevant product and service SPP guidelines along with third party ecolabels should be reviewed for developing the sustainability criteria.

The sustainable criteria could be guided by various SPP implementation guides released by international governments and organisations customised to the Indian context. Further, the criteria should be developed for the two types of products & services (i) goods requiring maintenance during use phase, have a warranty and require end-of-life disposal; and (ii) goods that are consumables, do not require maintenance during use phase and do not have major impacts due to end-of-life disposal.

For each criterion a verification method should also be identified in terms of manufacturer's certificate, supplier declaration etc. It will also be essential to identify potential vendors, build their capacity in the market to meet the sustainability requirements and inform the modification in the procurement and contract process. Engaging the market can help build trust and confidence with suppliers, create market conditions, showcase best examples and encourage innovations.

Certifications such as GreenCo and GreenPro (See Annexure 1) could be considered as a requirement / supporting qualification for contractual agreements. However, the present coverage of GreenPro is limited to construction industry. To overcome this, Indian Railway would need to partner with organizations to build capacity to obtain such certifications.

4.4 Piloting SPP

Considering the product selection (Chapter 4.1), market engagement and vendor shortlisting criteria (Chapter 4.2), piloting of the SPP in IR may be undertaken as below. The experience from the pilot will build on and strengthen the implementation of SPP for a scale up.

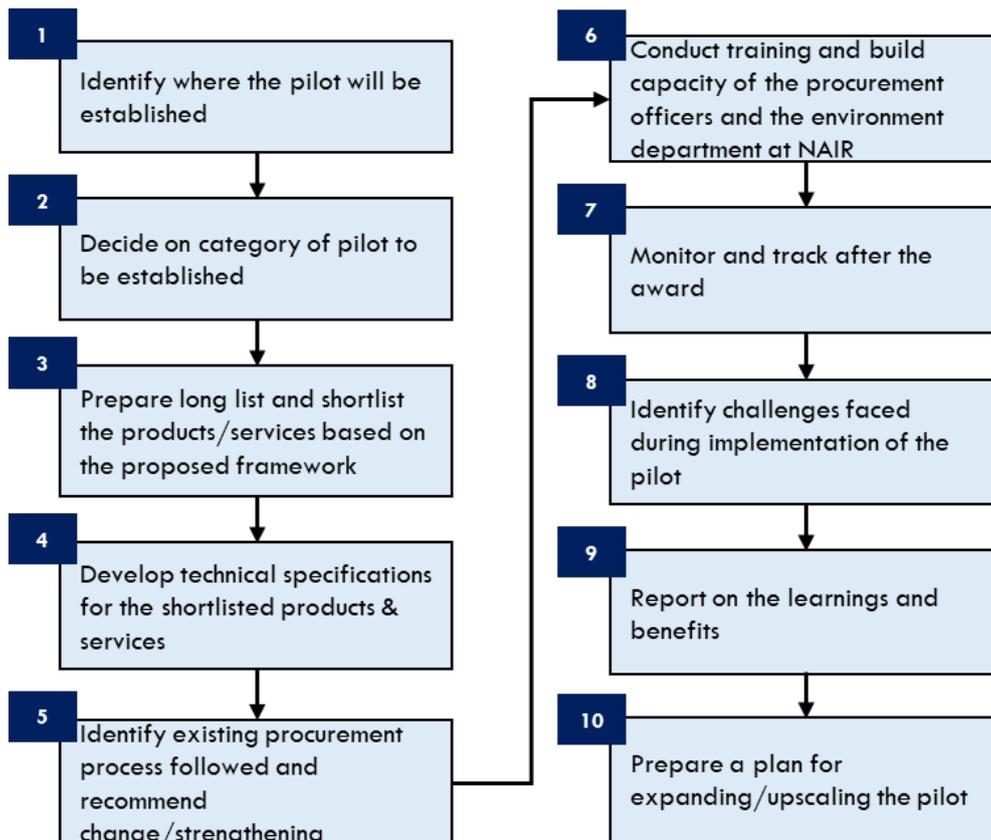
Decision points needed on these steps have also been outlined:

- Identify where the pilot will be established (Western Zone, Railway board or both)
- Decide on category of pilot to be established: Products/services or both
- Prepare long list and shortlist the products/services based on the proposed framework
- Develop technical specifications for the shortlisted products & services
- Identify existing procurement process followed and recommend change/strengthening
 - Vendor registration criteria
 - Use of 3rd party / certification scheme
 - Products with eco labels or cradle to cradle certification to promote Circular Economy
 - Provisions in the Manual for Procurement of Goods (MPG)
 - Bidding process- identify pre-qualification criteria, evaluation criteria
- Conduct training and build capacity of the procurement officers and the environment department at NAIR
- Monitor and track after the award
- Identify challenges faced during implementation of the pilot

- Report on the learnings and benefits
- Prepare a plan for expanding/upscaling the pilot

Additionally, and in order to help procurement officers with establishing standard operating procedures, guidance documents for each step of the SPP process need to be created. These documents should communicate tools, objectives, target groups, compliance measures and evaluation processes. Figure 2 presents the above steps:

Figure 15: Flowchart for Piloting SPP



Indian Railways could implement the pilot in accordance with UNEP's report, Sustainable Public Procurement in India⁷²: Selection of priority products and Preliminary Market Assessment.

The following products were identified for pilot testing of SPP policies:

1. Writing and printing paper
2. Disinfecting/cleaning solutions
3. Room air-conditioners

UNEP's report would act as a guideline for Indian Railways to implement SPP policies and modify them as the program goes ahead.

⁷² Sustainable Public Procurement in India: Selection of priority products and Preliminary Market Assessment <https://sustainabledevelopment.in/uploads/pdf/1592393377Sustainable%20Public%20Procurement.pdf>

4.5 Awareness raising and training

In the process of implementing SPP, awareness raising activities and trainings are vital. IR staff must obtain necessary knowledge and skills on SPP and should have sufficient access to information.

A successful implementation of SPP requires early communication (i.e. informing procurement officials as well as suppliers). A communication campaign with consistent and clear messaging will be important. With regards to the internal communication, all channels used by IR such as newsletter and intranet (amongst others) should promote SPP and provide information on its planned implementation. This way not only the awareness, but also the acceptance of SPP can be improved. In addition to communication with IR staff, communication with suppliers is equally important. Hence, the vendors should also be informed about the shift towards SPP and how SPP works. This way the private sector can adapt its practices in order to comply with IR's future SPP requirements. The business community in general should also be targeted to present the planned SPP activities of IR. Finally, the public should know about IR's SPP activities as well.

Awareness raising programs for procurement officers already took place in October 2020 and in April 2021. Additionally, training material was developed for both faculty staff of NAIR and suppliers to IR. For future training, all activities should regularly be accompanied by awareness raising measures by IR, as described above.

Apart from the training provided to procurement officers, there is a need to increase the capacity of vendors to adopt SPP practices throughout their supply chain. Indian Railways could support this by organising annual events for vendor engagement and providing financial as well as advisory assistance to SMEs to meet the sustainability criteria.

4.6 Review of the action plan and adapting the medium- and long-term actions

Evaluation of Pilot including impact assessment

To upscale the SPP efforts, Indian Railways will have to conduct a continuous evaluation as well as impact assessment of the pilot program. UNEP has released the Monitoring Sustainable Public Procurement Implementation guide. It presents recommendations for enabling frameworks and efficient systems to monitor SPP implementation at the organisation level, which draw on the existing literature, case studies, and the experience of working group members and reviewers. Indian Railways can follow this globally accepted methodology to track success of its pilot SPP program.

Prior to the start of phase two of the action plan activities, hence, the medium- and long-term actions (Chapter 5), phase one (i.e. short-term actions) will be reviewed. The aim of this review is to adapt the phase two actions, if needed.

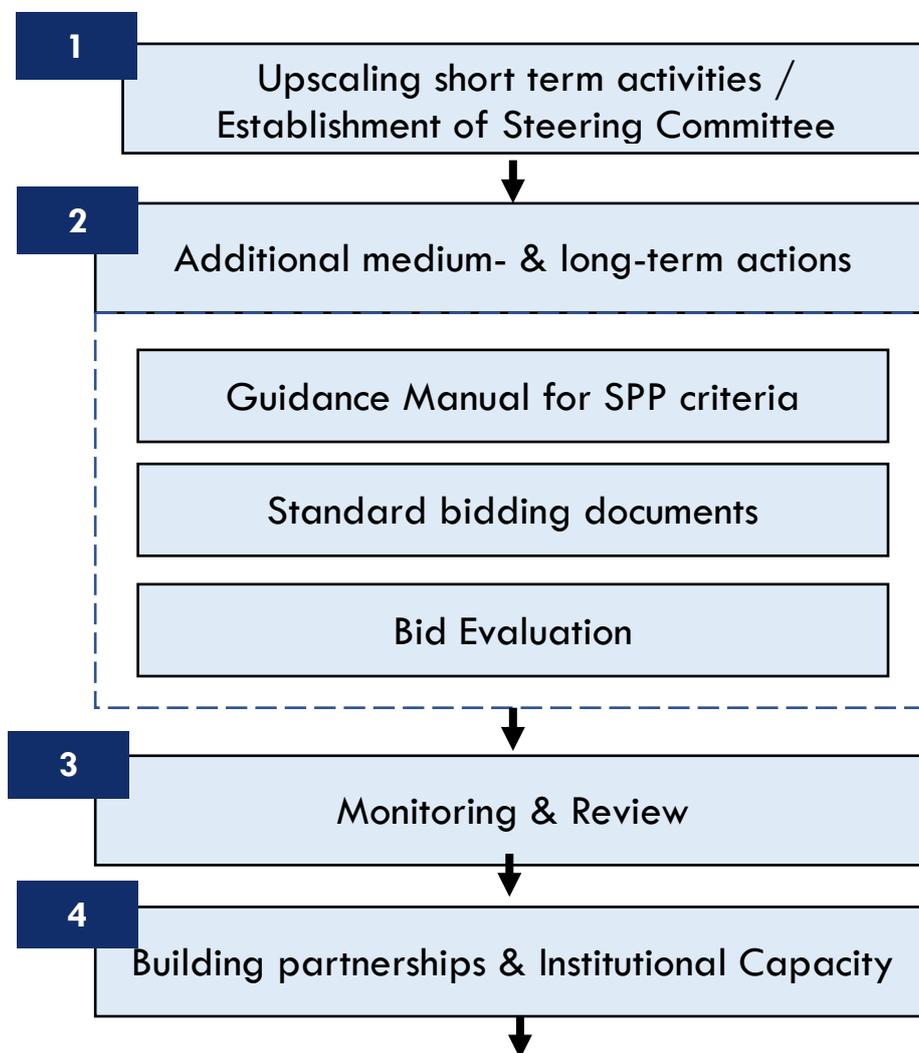
The review of the short-term actions will be undertaken after around 2 1/2 years. All results of phase one actions will be analysed in this review and the results will be reflected upon. As a consequence, obstacles that occurred can be identified and both targets and actions planned for the medium- and long-term (phase two) will be adapted accordingly. The improvement of actions of the first phase is key for a successful implementation of the long- and medium-term actions (3 years and beyond). Prior to the implementation of the newly designed and/or modified long- and medium-term actions and targets, the plan needs to be adopted by the steering committee.

5. DESCRIPTION OF MEDIUM- AND LONG-TERM ACTIONS

5.1 Introduction

The barriers and challenges faced during the implementation of the short-term actions as identified during the review will form a basis for defining the medium- and long-term actions. Medium- and long-term actions would include all activities which will need 3-5 years and 5-10 years respectively. These actions include upscaling short term activities, preparing guidelines for the implementation of SPP and building partnerships (see Figure 3). The medium-term actions will require IR to monitor and evaluate the implementation of SPP plan periodically and adjust them accordingly for effectiveness.

Figure 3: Medium- & Long-term actions



5.2 Upscaling short term activities

Establishment of a Steering Committee: Based on the pilot experience, a program for upscaling SPP will be formulated. A steering committee for implementation with key officials from different departments will be formed. This committee will be responsible for:

- Monitoring the progress of the implementation of SPP
- Proposing corrective measures, where appropriate
- Approving and signing off the outputs of the project (filled in Status Assessment, Legal Review and Market Readiness Analysis, SPP Policy Plan, etc.)
- Providing advice and guidance
- Serving as a forum for the consideration of issues that may impede the implementation of SPP and propose ways to address the identified obstacles
- Dissemination and promoting the SPP initiatives at a larger scale across all Railway zones

Examples from other countries shows that an independent entity, in this case the steering committee, should develop criteria and standards and oversee certification and eco-labelling of products. In addition, a list of products and manufacturers of approved green products of adequate quality must be maintained by the steering committee. This makes it simpler for IR to engage in green procurement without the need to undertake complex assessments with inadequate expertise. Finally, mandatory targets for green procurement help to achieve the desired level of performance; these targets can be graduated and made more ambitious over time depending on the maturity of the program and the market for green products.

Based on the implementation of short-term activities, a program for upscaling SPP will be formulated.

The SPP program will include targets, priorities, timeframe, list of prioritized products/services, teams responsible for implementation and mechanisms for monitoring performance. This program should be aligned with the existing initiatives of IR's Environment Directorate. Mandatory targets for green procurement help to achieve the desired level of performance; these targets can be graduated and made more ambitious over time depending on the maturity of the program and the market for green products.

The SPP program in IR should be introduced in phases divided over various steps and procedures. Once the program is set, an implementation plan is to be established outlining specific tasks with responsibilities. This program needs to be communicated to all divisions of the Railway Board and other agencies particularly to the officials most affected and to suppliers who have a role to play in implementing the program.

According to the Strategy Paper on Resource Efficiency released by EU-REI and NITI Aayog⁷³, the first step to implement the strategy is starting with a small range of products for which the market is already reasonably well established, and then gradually expand as the program matures.

Further engagement with certification entities to develop standards, for different IR related products and services needs to be organized. Guidelines on testing methodologies, product specifications and codes of practices on certifying products need to be established.

⁷³ EU-REI & NITI Aayog 2019

5.3 Identifying additional medium- and long-term actions

A generic guidance manual on updating and adapting procurement guidelines for different products and services shall be developed such that the Indian Railways could adopt the same approach for developing SPP criteria guidelines for other products not included in the pilot phase.

In order to finalize the SPP criteria and their evaluation, a workshop will be organized. The workshop will focus on finalizing the criteria as well as discuss on the Models for Bid Evaluation based on Sustainability Criteria. The workshop will be action oriented with group work and interactions being the focus. Participants of the workshop will include the steering committee members, IR officials from procurement and the Environmental Directorate.

A standard bidding document based on the recommendations of the workshop, with inclusion of sustainability criteria in the technical specifications, evaluation methodology and contract will be formulated to guide issue of tenders. These specifications will also ensure that there is no compromise on product quality and functionality.

After analysing the potential responsiveness of the market and the national business sector to SPP tenders released during the pilot session, a framework for evaluation of bids will be developed. This framework will have a scoring system to check the bids on SPP for vendor pre-qualification on sustainability criteria where appropriate, evaluation of the goods/service for the sustainability criteria listed in the technical specifications and the option of using life cycle costing.

To execute a contract for the supply of goods/service an agreement is signed between the supplier and IR. This contract stipulates clauses on warranties, performance parameters, responsibilities of the supplier, maintenance schedules and end of life management. Sustainability requirement criteria for each of above clauses will be introduced to bind the supplier in delivering a sustainable product/service across its life cycle. A SPP guideline will be prepared for procurement officials in each stage to ensure smooth transition.

Research Design and Standards Organisation (RSDO) and NAIR should increase and adopt more training programs related to sustainability. It would be recommended that both of the organisations collaborate to develop a Centre of Excellence for SPP. This could promote innovation not only within the Indian Railways but also spread awareness amongst vendors. The research conducted under this collaboration would also be beneficial to other sectors implementing SPP in India.

Apart from the including green criteria for SPP, the Indian Railways should look to integrate policies of circular public procurement. Circular public procurement is an approach to greening procurement, which recognises the role that public authorities can play in supporting the transition towards a circular economy. Circular procurement can be defined as the process by which public authorities purchase works, goods or services that seek to contribute to closed energy and material loops within supply chains, whilst minimising, and in the best case avoiding, negative environmental impacts and waste creation across their whole life cycle. For example, IR being one of the largest networks in the country can promote reverse logistics and install reverse vending machines at stations.

5.4 Building partnerships and institutional capacities

A capacity building program targeting procurement officials on the changes of the procurement activities will be required. Officials will need adequate training on sustainability integrated detailed functions such as preparation of technical specifications, tender documents, evaluation of

prequalification and bidding documents, among others. SPP guidelines will be developed to be used by public procurers.

A program for building a cadre of master trainers will be required. Formal collaborations with some of the leading national institutions will greatly help to address the scale of training requirements. Table 3 provides global examples of training and capacity building efforts on SPP. Selected such institutions are listed in Annexure 2 for reference.

Table 10: Examples of training and capacity building efforts on SPP

- EU supported creation of GPP Training Toolkit (consisting of six independent modules and ten operational modules, with PowerPoint presentations and accompanying guidance) or use by public purchasers and by GPP trainers⁷⁴.
- Ministry of Finance in China provides training for procurement staff to help them become more confident in applying green public procurement policies, new procedures and developing criteria that include environmental considerations⁷⁵.
- Briefing sessions are carried out by Japanese Government on GPP in eight prefectures every year. Seminars cover information about “Law on Promoting Green Purchasing”. To encourage the enforcement on green purchasing law by local public institutions, a workshop targeted to local procurers is held 3 times every year. The workshops aim to engage those public bodies that are not implementing GPP⁷⁶.
- In Korea, Public Procurement Service (PSS) has developed the “Green Purchasing Educational Course” in the Public Procurement Human Resources Development Centre. The program is oriented to procurement officers of public organizations. The training is undertaken twice a year with a total of 21 hours. Nationwide GPP training is also offered to public officials every year. GPP guidelines developed by KEITI are distributed before the training session. Annual nationwide training is provided from November to December for the following year’s GPP implementation, and additional training is provided for newly appointed GPP staff.

5.5 Setting up an MRV system

The foundation for solid monitoring and evaluation of the SPP processes is an MRV (Monitoring, Reporting and Verification) system that measures the success of SPP at all levels relevant for IR. It provides an overview of the achievements of SPP within IR and gives a transparent view on the results of the implementation guide. Starting with MRV right from the beginning of implementing SPP will be worthwhile. Existing processes and readily available data can be used when integrating the SPP monitoring in the current procurement monitoring system. In order to establish an MRV system that is accurate and efficient at the same time, relevant stakeholders must be involved at the initial planning phase. These might include representatives from finance, facility management and procurement departments as well as IT.

⁷⁴ European Commission 2019

⁷⁵ UNEP 2017

⁷⁶ APEC 2013

SPP monitoring should serve several purposes. First of all, it can identify if targets are met or missed. In case targets are missed, it is important to identify the reasons and the responsible entity will need to take corrective actions. Secondly, the functioning of processes can be assessed. It will be checked if processes are well designed and run smoothly and efficiently. If processes are inefficient, one reason could be that competencies are not clearly allocated or that relevant know-how is missing. Once the issues are identified, processes can be modified accordingly. A third purpose of MRV is the evaluation of the current SPP policies. The necessary information for this will be provided by the continuous monitoring results. This way, the overall SPP approach can be reviewed and updated accordingly.

The monitoring system needs to have specific targets set in place in order to monitor the progress of the SPP implementation. Hence, identifying these targets is one essential step before introducing an MRV system. These targets should cover three levels: impact, outcome and output. In order to track the performance on each level, indicators will need to be defined for all running processes and results on the respective level. The defined indicators will need to cover the short- (2 1/2 years) as well as the medium- and long-term (3 years and beyond).

The output level relates to the number of training hours provided for SPP and the number of communication activities, amongst others. The outcome level refers to indicators covering targets such as the SPP share of IR's entire procurement and the number of suppliers participating in SPP procurement bids. While the impact level refers to indicators relating to environmental, social and economic benefits.

The results from the MRV system can be used in different ways. As it tracks the entire SPP performance of IR, it can make sure that all involved stakeholders implement the actions, according to the implementation guide. Hence, the actions are monitored in detail and shortcomings are documented. Furthermore, the results can be useful for the communication with suppliers and the general public (see section on awareness raising and training) by highlighting successes regarding the SPP implementation.

6. WAY AHEAD

Sustainable Public Procurement at Indian Railways is more than “buying green”. It is an important signal to vendors and the market with regard to policy priorities and enables healthier working conditions, supports an improved environment, as well as long-term savings and strengthens the public image for IR and the Ministry of Indian Railways.

IR has already launched a range of initiatives and has taken several steps towards environmentally friendly purchasing. Its actions already show commitment towards SPP, which is also anchored in its “Vision and Mission 2020”. Some examples, such as the installation of bio-toilets in passenger coaches, the “Green Stations” initiative and the gradual increase of using solar energy guide the way towards greener practices.

With this action plan, new ways of SPP are depicted, where the concept of vendors supply chain management is considered as a central aspect. The need to increase vendors' capacities to adopt SPP practices throughout their supply chains is becoming more and more important. IR can support this by providing advisory assistance to vendors to meet the sustainability criteria in the framework of vendor engagement activities.

Successful adoption of sustainable procurement practices as depicted in this action plan will depend on the government's capabilities and its commitment regarding the SPP transformation process. Coordination and involvement of the various stakeholders (agencies, ministries, etc.) requires strong leadership and capacities of the Ministry of Railways. Therefore, building expertise and institutional responsibilities linked with a clear strategy will be essential for the way forward. This action plan and the accompanying implementation guide build the strategic framework for successfully embedding SPP in IR's procurement policies and practices. If IR will implement all key actions described, it will not only contribute significantly to the green transition in India, it can become a front runner and hence, act as a role model nationally and internationally.

ANNEXES

Annexure 1: CII Green Pro / Green Co

In India, CII has released GreenCo and GreenPro certification. GreenCo rating is applicable to both manufacturing facilities and service sector units. The rating is implemented at unit or facility level. The Green Company Rating System advocates a performance-based approach. It is unique as it is highly performance oriented and significant weightage is provided for the performance / results achieved (70 %). The company has to perform and achieve superior performance in most of the Green parameters to reach highest rating level.

- 700 companies are engaged with GreenCo. Out of which 335 are already rated and in a few months, this will reach 450
- CII aims to reach 1000 GreenCo certified companies by 2022
- 10% of all GreenCo rated companies are service companies
- 20% of all GreenCo rated companies are MSMEs
- 25% of all GreenCo rated companies are state enterprises.

GreenCo has 4 target groups at present:

1. Individual companies
2. State governments
3. Sectoral association
4. Third-party vendors / suppliers for companies that are GreenCo certified.

GreenPro evaluates a product based on a holistic 'Life Cycle' based approach and awards the Ecolabel. The Ecolabel encourages the product manufacturers to implement green measures in the following stages of the life cycle of a product.

- Raw Materials
- Manufacturing Process
- Product Performance during use
- Recycling / Disposal.

The GreenPro Ecolabel is valid for 2 years from the date of award of Ecolabel for a product / product range. At the end of the validity period, the manufacturer has to renew the ecolabel by submitting the product performance related documents as per the relevant GreenPro standard

Annexure 2: Institutions to partner with to build capacity of IR

Additional new partnerships will have to be forged for a systematic and continuous engagement with leading academic institutions, research organizations and experts, both in India and abroad for the purpose of capacity building. Some of potential institutes are listed below:

1. National Institute of Environmental Engineering Research Institute
2. Indian Institute of Technology (IIT), Delhi
3. Centre for Environmental Science and Engineering (CESE), IIT Bombay, Mumbai
4. Indian Institute of Technology (IIT), Kanpur
5. Indian Institute of Technology, Roorkee
6. Indian Institute of Science (IISc), Bangalore
7. TERI University, Delhi
8. National Institute of Industrial Engineering (NITIE), Mumbai
9. Centre for Excellence in Environmental Economics, Tamil Nadu
10. Indian Institute of Forest Management (IIFM), Bhopal
11. Wildlife institute of India (WII), Dehradun
12. Centre for Environmental Planning and Technology (CEPT) University
13. Centre for Science and Environment (CSE)
14. Malaviya National Institute of Technology, Jaipur
15. Centre of Studies in Resources Engineering (CSRE), IIT Bombay
16. Department of Environmental Science & Engineering, ISM
17. National Institute of Technology, Hamirpur
18. Administrative Staff College of India
19. National Centre for Earth Science studies (CESS), Kerala
20. Environment Protection Training & Research Institute (EPTRI)
21. Environment Management and Policy Research Centre
22. Indian Institute of Technology (IIT), Kharagpur
23. Himalayan Forest Research Institute (HFRI), Shimla
24. Institute of Rural Management Anand (IRMA), Gujarat
25. Mahatma Gandhi Institute of Rural Energy and Development (MGIRED), Bengaluru
26. Arid Forest Research Institute (AFRI), Jodhpur
27. International Institute of Waste Management, Bangalore
28. Engineering Staff College of India (ESCI), Hyderabad
29. CURE: Clean Up & Recycle for Environment, Jaipur
30. Federation of Indian Chambers of Commerce and Industry (FICCI)
31. The Associated Chambers of Commerce & Industry of India (ASSOCHAM)

32. CII-Triveni Water Institute, Haryana
33. Society for Indoor Environment (SIE)

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SECTION 4

IMPLEMENTATION GUIDE

Dr. Prasad Modak, Sivaranjani Subramanian, Walter Kahlenborn, Kathrin Kohl



List of Abbreviations

BEE	Bureau of Energy Efficiency
BIS	Bureau of Indian Standards
CII	Confederation of Indian Industry
CII-IGBC	Indian Green Building Council
CFPA	Chlorine-Free Products Association
COS	Zonal Controller of Stores
EU	European Union
EnHM	Environment and Housekeeping Management
FSC	Forest Stewardship Council
GeM	Government e-Marketplace
GFR	General Financial Rules
GPP	Green Public Procurement
ICLEI	International Council for Local Environmental Initiatives
IR	Indian Railways
IRSS	Indian Railways Store Services
IRILMM	Indian Railways Institute for Logistics and Materials Management
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
LCC	Life Cycle Costing
MoR	Ministry of Railways (India)
MoEFCC	Ministry of Environment, Forest and Climate Change (India)
MPG	Manual for Procurement of Goods
MR	Monitoring and Review
NAIR	National Academy of Indian Railways
PEFC	Programme for the Endorsement of Forest Certification
PVC	Polyvinyl chloride
RDSO	Research Design & Standards Organization
SC	Steering Committee
SCP	Sustainable Consumption and Production
SPP	Sustainable Public Procurement
TERI	The Energy and Resources Institute
UNEP	United Nations Environment Programme

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1. INTRODUCTION

This Implementation Guide is a supporting document to the SPP Action Plan for Indian Railways. It is a manual that outlines all steps to implement each activity described in the Action Plan.

The Guide is structured in two main parts, (short- and medium-/long-term actions) and contains 30 activity fiches in total. Each activity fiche follows the same outline, giving clear guidance on steps to implement, sub-tasks, responsibilities, timeline and involvement of stakeholders. Examples on execution of the steps are provided, where relevant.

2. SHORT TERM ACTIONS

Short-term actions form the basis for achieving long-/medium-term actions. They are designed to have an immediate effect and should be implemented within 0-3 years. For easier implementation, the actions will need to be aligned with the existing initiatives of IR's Environmental Directorate. The six main short-term actions consist of 14 activities.

2.1 Preparatory Action

2.1.1 Establishment of Working Committee

Description of Activity

Prior to the implementation of the first short-term activities, the establishment of a working committee is needed. This committee should be composed of representatives from the following entities: Environment and Housekeeping Management (EnHM), Railway Board, Controller of Stores, NAIR and RDSO.

The working committee shall act as a body that is primarily responsible for the implementation of SPP until the completion of the pilot phase. It will support the Steering Committee that will guide implementation of the medium- and long-term actions.

Sub-Tasks	Responsibilities	Timeline
-----------	------------------	----------

n/a

n/a

n/a

Involvement of / Input from other organizations:

- Environment and Housekeeping Management (EnHM)
- Ministry of Railways - Railway Board
- Zonal Controller of Stores (COS)
- National Academy of Indian Railways (NAIR)
- Research Design & Standards Organization (RDSO)

2.2 Product Selection

2.2.1 Development of Master List of Products and Services

Description of Activity

The key objective of this activity is to develop a master list of around 10 products and services that should be considered for the implementation of SPP. The Nationally Determined Contribution targets and other environmental schemes of the Government of India should be considered for this activity. In the process of developing the master list, three main criteria should be considered: 1) the procurement volume (number of units), 2) the related expenditures) and 3) the environmental impact of these products and services. A ranking will be set up, considering the procurement volume and related expenditures at first. Subsequently, the ranked products and services will be checked according to their environmental impact. The master list will serve as a basis for the identification of SPP products and services to be piloted (see 2.5.1).

For the creation of the master list, external experts such as Confederation of Indian Industry, Development Alternatives, TERI, familiar with environmental impacts of products and services should be consulted. The master list will be distributed to the working committee for revision and approval.

Sub-Tasks	Responsibilities	Timeline
Development of master list of products and services	Railway Board with support of GeM, Zonal Railways and production units, Indian Railways Store Services	1-2 months (update on a 5-year basis)
Revision and approval of master list	Working Committee	1 week

Involvement of / Input from other organizations:

- External Experts on Environmental Impacts of Products and Services
- Ministry of Railways - Railway Board
- Zonal Controller of Stores (COS)
- Indian Railways Institute for Logistics and Materials Management (IRILMM)
- Working Committee
- Research Design & Standards Organization (RDSO)
- Confederation of Indian Industry (CII)
- Government e-Marketplace (GeM)
- Zonal railways and production units
- Indian Railways Store Services (IRSS)

Comments:

Products and services that are directly produced by Indian Railways or public sector units should be excluded from this activity.

2.2.2 Identification of Priority Products and Services

Description of Activity

Subsequent to the creation of the master list, the identification of priority products and services follows. In this step, the objective is to limit the number of pre-selected products and to develop a short list.

It is essential, that the selected criteria for the identification of priority products and services are in line with the targets of IR. IR's Vision and Mission (Environment Directorate) is particularly relevant for the identification of such criteria. The criteria should be aligned with IR's actions related to: the use of clean energy, resource efficiency, the conservation of water and other natural resources, afforestation, waste management and green certifications.

Based on the above aspects, possible criteria for the identification of priority products and services are listed below (and can be further modified by IR):

- the **estimated environmental impact** (i.e. considering production, usage and disposal phase),
- the **market readiness** (i.e. market can provide environmentally friendly products),
- **cost implications** (i.e. considering acquisition, usage and disposal costs),
- **practicability** with regards to green criteria (i.e. quantifiable and verifiable criteria),
- **compliance** with environmental policy (i.e. alignment with government's strategies on e.g. climate protection),
- **support to local economy** and SMEs (i.e. local production and trading).

The working committee needs to determine which criteria are the most relevant for identifying priority products and services. The criteria then need to be weighted and an evaluation to be carried out. The working committee is responsible for the final selection of the products and services. It shall select the products and services with the highest final score.

Sub-Tasks	Responsibilities	Timeline
Determination of relevant criteria	Railway Board	Once and update on a year-basis, if needed
Development of short list	Railway Board	Update on a 3-year basis
Final selection of the products and services	Working Committee	3 months

Involvement of / Input from other organizations:

- Steering Committee
- Ministry of Railway - Railway Board
- Indian Railways Environment Directorate
- Zonal Controller of Stores (COS)

-
- Indian Railways Institute for Logistics and Materials Management (IRILMM)
 - Government e-Marketplace (GeM)
 - Zonal railways and production units
 - Indian Railways Store Services (IRSS)
-

2.2.3 Creation of Technical Specifications

Description of Activity

Subsequent to the identification of priority products and services, SPP technical specification criteria have to be determined that are of highest relevance, applicable and practicable to use.

Use of existing ecolabels can provide the environmental criteria associated with a product or service and can be used to help define specifications or be used directly as a requirement for products/services. Certifications such as GreenCo and GreenPro by the Confederation of Indian Industry (CII) can also be considered. A list of existing ecolabels and certifications for the priority products and services need to be identified.

Based on procedures and experiences from other countries and the private sector implementing SPP, the following standard template can be used by the Railway Board:

- **Scope:** Delimitation of the products to which the specifications apply; for instance, copying and graphic paper, excluding drawing books or other specific sheets of paper
 - **Key environmental impact and GPP approach:** Identification of all aspects where the product has major negative impacts, addressing the key environmental impacts for each phases of the product cycle. Specifications across the following parameters needs to be addressed:
 - **Product specifications:** Reference to national standards, addressing the most important environmental aspects and easy to verify, justification included (refer to Chapter 3.1 Procedures on the development of further technical specifications)
 - Resource Efficiency
 - Durability
 - Exclusions of harmful substances
 - Use of recycled content (for e.g. use of plastic in railway sleepers)
 - Use of recycled products
 - Take-back schemes
 - Packaging
 - End-of-life disassembly
 - Ecolabels
 - Product certifications where applicable
 - Life cycle impacts
 - **Evidence:** Which evidence should be provided by the supplier, linked to verification
 - **Verification:** How the criteria can be verified by the procuring entity; e.g. product test, proof of ecolabel certification, self-certification)
-

- **References:** Background information and links to existing examples

The Railway Board will be responsible for the determination of the criteria, receiving support from GeM and external consultants.

As an illustration, the technical specifications for 'Paper for Office Use' can be set as following:

Sustainability Requirement Criteria	Requirement Definition	Verification Guidance
Sustainable forest wood fibres	Paper must contain at least 70% fibres that has been made from sustainable virgin fibres	Any appropriate means of proof demonstrating that criteria aimed for sustainability for procurement of raw material (wood / wood pulp) are met, will be accepted, such as a declaration from the manufacturer along with an independent audit report by a recognised body certifying the compliance to the criteria. Products carrying the FSC label or equivalent will be deemed to comply.
Recovered paper fibres (pre- and post-consumer recycled fibres)	Paper must contain at least 70% recovered paper (include both post-consumer recycled fibres and pre-consumer recycled fibres)	Any appropriate means of proof demonstrating that the criteria are met will be accepted, such as a declaration from the manufacturer along with an independent audit report by a recognized body certifying the compliance to the criteria. Products carrying the Blauer Engel (German ecolabel), Umweltzeichen (Austrian ecolabel) or the FSC Recycled label or equivalent will be deemed to comply. The European Ecolabel, the Green Seal ecolabel and the PEFC label can also serve as means of proof if it is specified that the paper is made from 100% recovered paper fibres.
Elementary chlorine free (ECF)	The paper must be at least Elementary Chlorine Free (ECF)	Any appropriate means of proof demonstrating that the criteria are met will be accepted, such as a technical dossier from the manufacturer along with a test report from a recognized body showing compliance. All products carrying the European Ecolabel, Blauer Engel (German ecolabel), Nordic Swan, Eco Mark Japan, Chlorine-Free Products Association (CFPA) label or the Green Seal ecolabel, will be deemed to comply.
Environmentally-friendly packaging	The packaging for the paper shall not contain PVC	Any appropriate means of proof demonstrating that the criteria are met will be accepted, such as a technical dossier from the packaging

		manufacturer or a declaration from the paper manufacturer along with a certificate from a recognized body stating explicitly the absence of PVC in the material.
Brightness	The brightness level must be between 90 to 100 as measured by the ISO Brightness scale given in ISO 2470:2009 or equivalent	Any appropriate means of proof demonstrating that the criteria are met will be accepted, such as a technical dossier from the manufacturer along with a test report from a recognized body showing compliance. All products carrying the European Ecolabel, Blauer Engel (German ecolabel), Nordic Swan, Eco Mark Japan, Chlorine-Free Products Association (CFPA) label or the Green Seal ecolabel, will be deemed to comply.

Sub-Tasks	Responsibilities	Timeline
Identification of existing ecolabels and certifications	Working Committee	~ 2-3 months
Determination of technical criteria for product / service	Railway Board and Working Committee	Approx. 9 – 12 months
Development of technical specifications	Railway Board and Working Committee	Per year three technical specifications
Involvement of / Input from other organizations:		

- Ministry of Railway - Railway Board
- Zonal Controller of Stores (COS)
- National Academy of Indian Railways (NAIR)
- Research Design & Standards Organization (RDSO)
- Indian Railways Institute for Logistics and Materials Management (IRILMM)
- Ministry of Finance - Task Force on Sustainable Public Procurement (SPP)
- Government e-Marketplace (GeM)
- External consultants

2.3 Market Engagement

2.3.1 Market Assessment Report

Description of Activity

The objective of a market assessment is to gain knowledge and understanding of the market and to get an overview of the availability of green products. Assessing and hence, engaging the market can help to better determine the motivation of the right bidder to participate in the procurement and can build trust with suppliers.

A successful market assessment helps to specify aligned green criteria and to determine the main products/services (out of the Master list in 2.2.1) to be piloted. In general, three major aspects should be considered when assessing the market: 1) environmental aspects, 2) structure of the market, 3) price implications. The market assessment, can be conducted by the working committee and supporting agencies, or it can be (partly) commissioned to a third party. Generally, if specific questions on environmental aspects arise, IR should request support from external consultants. The market assessment should also aim at determining the technical specifications for priority list of products and services (2.2.2) already available in the market and the readiness of the vendors to deliver them. The study should identify those products and services that can easily respond to the inclusion of technical specifications (2.2.3) in procurement.

All results of the assessment are to be documented in a report, covering four major aspects:

1. **market structure** (i.e. number of suppliers including characteristics and special features of the market),
2. **product characteristics** (i.e. extent of environmental friendliness of green vs. conventional products and services),
3. **product availability** (i.e. overview of range of environmentally friendly products and services, and availability),
4. **summary and recommendations** of findings.

The report will be developed by the Railway Board, supported by external consultants (if needed), and will be submitted to the Steering Committee.

Sub-Tasks	Responsibilities	Timeline
Passive / Active Market Assessment	Railway Board, external consultants	Duration of approx. 2 months
Updating data collected during passive assessment	Railway Board, external consultants	Regularly (depending on market changes)
Development of report	Railway Board, external consultants	Within 2 months of assessment

Involvement of / Input from other organizations:

- Ministry of Railway - Railway Board
- Zonal Controller of Stores (COS)
- National Academy of Indian Railways (NAIR)
- Research Design & Standards Organization (RDSO)
- Indian Railways Institute for Logistics and Materials Management (IRILMM)

2.3.2 Consultation Workshops with (potential) Vendors

Description of Activity

When extensive information from the market is not available through passive market assessment (i.e. desk research), an active approach needs to be utilized. One of the active methods of market assessment is engaging the market through consultation workshops with (potential) vendors. Consultation workshops are effective ways of exchanging information, sensitively understanding the circumstances and the needs of a market segment, and engaging potential vendors. In addition, focus group meetings with vendors and/or vendor associations have proven to be a very valuable source for market analysis and can give a solid overview of the market situation.

One pilot workshop for product and one for services for the prioritised products and services needs to be conducted. The workshop should focus on the products and services to be piloted. The workshop can engage the vendors to answer questions such as 1) How ready is the market for SPP for the prioritized products/services?; 2) Will SPP increase the cost burden and examples of other green vendors?; 3) What are the barriers in becoming a green vendor?.

The entire market engagement process can help building trust and confidence with vendors and showcases best examples, and encourages innovations. It can be used to inform the gradual modification in the procurement and contract process towards SPP by involving the known and potential vendors alike.

Sub-Tasks	Responsibilities	Timeline
Conduct of consultation workshops	Working Committee, external consultants	1-2 months

Involvement of / Input from other organizations:

- Ministry of Railway - Railway Board
- Zonal Controller of Stores (COS)
- National Academy of Indian Railways (NAIR)
- Research Design & Standards Organization (RDSO)
- Indian Railways Institute for Logistics and Materials Management (IRILMM)

2.4 Vendor Management

2.4.1 Pre-qualification of Suppliers

Description of Activity

This activity describes the setting up of pre-qualification criteria for suppliers to implement SPP. There is a need to identify environmental and social legislations relevant to the sourcing, manufacturing and delivery of products and services considered. A significant share of procurement in railways is from vendors approved by RDSO. Currently, in the approval process, only the technical and financial capability of the vendor is considered. SPP's success depends on the vendor's ability and capacity to supply sustainable goods and services that are compliant to applicable environmental and social legislations for the given contract period.

The vendor registration needs to be modified to include information on their environmental and social compliance and sustainable practices / certifications. The information on existing vendors is available with RDSO. The pre-qualification sustainability criteria refer to environmental and social legal compliance and are primarily applicable to the bidder and their operations in India. These are common across all the products and services:

- **Compliance with environmental legislation:** Suppliers shall not be permitted to take part in a bid if they have been found guilty of non-compliance with environmental legislation, proven by any means. Suppliers must provide a declaration that they meet this criterion in the bid submission form. Upon request, they may be asked to provide documentary proof to support this declaration.
- **Adherence to national social regulations and standards:** Suppliers shall not be permitted to take part in a contract if they do not adhere to the national social standards and legislations. Suppliers must provide a declaration that they meet this criterion in the bid submission form. Upon request, they may be asked to provide documentary proof to support this declaration.

The pre-qualification criteria should be provided to RDSO for vendor registration and verification.

Sub-Tasks	Responsibilities	Timeline
Identify environmental and social legislations relevant to the product and services	EnHM, Railway Board, RDSO	3 months
Develop pre-qualification criteria	EnHM, Railway Board, RDSO	3 months

Involvement of / Input from other organizations:

- Zonal Controller of Stores (COS)
- National Academy of Indian Railways (NAIR)
- Ministry of Environment, Forest and Climate Change (MoEFCC)

- Indian Railway Stores Service (IRSS)
- Bureau of Indian Standards (BIS)

2.4.2 Supplier-related Criteria in the Awarding Process

Description of Activity

Suppliers can have a considerable impact on the sustainability performance of their goods and services based on their production and manufacturing processes. They are also likely to be able to control and manage the sustainability performance of their supply chain and contractors.

While selecting suppliers in the awarding process, it would be useful to consider the supplier's risk profile and performance. In some cases, paying more for a product or service with reduced environmental or social impact may be considered.

Environmental standards and certification schemes achieved by the vendors help to build confidence amongst the procurement officers. In addition to compliance, depending on the product/service and market situation, additional criteria on sustainability performance/certifications could be considered. These can include:

At the Supplier level

1. Industry certification e.g., GreenCo

Products sold by the supplier

2. GreenPro of CII-IGBC for building materials
3. Green Guard for Furniture
4. GOTS for Textiles

Management Systems adopted by the Supplier

5. ISO 14001 Environmental Management System
6. Production of the product according to international labour standards e.g. SA 8000

The supplier is required to demonstrate the above criteria with relevant documentation. These documents will be scrutinised for verification.

Sub-Tasks	Responsibilities	Timeline
Identify standards and certifications relevant to the product and its supply chain	EnHM Directorate, Railway Board, RDSO	3 months
Develop evaluation criteria	EnHM Directorate, Railway Board, RDSO	3 months

Involvement of / Input from other organizations:

- Zonal Controller of Stores (COS)
- National Academy of Indian Railways (NAIR)
- Ministry of Environment, Forest and Climate Change (MoEFCC)
- Indian Railway Stores Service (IRSS)

2.5 Piloting SPP

2.5.1 Identification of Selected Priority Products and Services for Pilot Implementation

Description of Activity

This activity consists of identifying products and services from the priority list (section 2.2.2) that will be considered in the implementation of SPP. The Railway Board, along with key consultants, EnHM Directorate and the Zonal Controller of Stores (COS) can identify products and services for piloting, according to market assessment report and consultation workshops with vendors.

While shortlisting the priority products/services, it is important to define the minimum functionality specifications clearly to remove any perception that sustainable products/services do not compromise on functionality. In addition, preference may be shown to vendors who offer take back to promote recycling towards circular economy without compromising the quality and avoiding environmental and social risks.

Sub-Tasks	Responsibilities	Timeline
List priority products and services to be piloted	Working Committee, Railway Board and Zonal COS	5 months

Involvement of / Input from other organizations:

- Ministry of Finance SPP Taskforce
- National Academy of Indian Railways (NAIR)
- Research Design and Standards Organisation (RDSO)
- Indian Railway Institute of Logistic and Material Management (IRILMM)

2.5.2 Identification of Zonal/Board to Pilot SPP

Description of Activity

This activity includes identifying zonal railways or departments within the Railway Board where the SPP pilot can be established.

An initial screening for a specific zone can be based on the following criteria:

- a) The volume of the shortlisted priority products procured
- b) Presence of existing ongoing and established green initiatives
- c) Available institutional support for training and capacity building of procurement officers
- d) Commitment or support regarding budget for the pilot

The Railway Board can further engage with the shortlisted zones based on the above listed criteria to gauge voluntary participation and understand vendors' availability for green projects. Based on the learnings, the Railway Board and Environment and Housekeeping Management (EnHM) can finally select the zonal railways or department within the railways board to pilot SPP.

Sub-Tasks	Responsibilities	Timeline
Shortlist zone/board project	Railway Board and EnHM	4 months
Evaluate based on the given screening criteria	Railway Board and EnHM	4 months
Engage in assessing readiness for participation	Railway Board and EnHM	4 months

Involvement of / Input from other organizations:

- Ministry of Finance SPP Taskforce
- Zonal Controller of Stores (COS)
- National Academy of Indian Railways (NAIR)

Comments:

More than one board /zone can be selected to pilot SPP

2.6 Capacity Building

2.6.1 Awareness-Raising

Description of Activity

Successful implementation of SPP requires early communication (i.e. informing procurement officials as well as suppliers, see section 3.3.2). For proper implementation of SPP, awareness-raising programs should be provided in several stages of the process and with different target groups.

Early in the process of implementing SPP, a session should be held to raise awareness among top tier head of Zonal Railways, Member of Materials Management, who will ultimately decide the strategic value and direction of SPP. The awareness program should emphasize the importance of SPP, existing green initiatives and the potential benefits. Also, the awareness session should cover the vision, mission, policies, and sustainability related initiatives of Indian Railways.

The second target group for the awareness programs are the procurement officials. They need to be familiarized with SPP and its strategic advantage over the long run. Procurement officials are generally conversant with the process laid down. However, aspects of sustainability like the prequalification, criteria, verification, compliance monitoring, etc. are new elements that will be dealt with by the officials. Awareness sessions on highlighting the integration of sustainability in the procurement process along with benefits need to be conducted.

Awareness sessions for suppliers and other private sector stakeholders should also be considered. This will ensure that they have a better understanding and are able to respond to new SPP requirements and expectations. The awareness initiatives should be undertaken by NAIR in collaboration with working committee and external consultants.

Sub-Tasks	Responsibilities	Timeline
Develop communication material	NAIR, Working Committee and EnHM, External Consultant	6 months
Conduct awareness sessions	Working Committee, NAIR and EnHM	Periodically once every 6 months for 2.5 years

Involvement of / Input from other organizations:

- Railways Board
- MoF SPP Taskforce
- National Academy of Indian Railways (NAIR)
- Research Design and Standards Organisation (RDSO)
- Professional Certification Bodies
- Research & Academic Institutions
- Indian Railway Institute of Logistic and Material Management (IRILMM)

2.6.2 Introducing SPP in the Current Training Courses for NAIR

Description of Activity

A review of the existing curriculum on procurement and sustainability at NAIR needs to be undertaken by an external agency. NAIR has introduced a training program on environmental management and sustainability with SPP as a part of the curriculum. Training courses offered by other institutions and organizations on SPP can be studied based on the content, target participants and mode of delivery. Gaps in the current training course need to be identified.

The material for training should come from two different sources:

1. The training course on SPP developed for the environment and sustainability training program conducted at NAIR in July 2020, needs to be customised, targeting different procurement officials, top-tier officials and other IR staff. The content of the training targeting procurement officials will be developed based on introducing sustainability in the procurement process, detailed integrated functions such as preparing technical specifications, tender documents, and evaluating prequalification and bidding documents.
2. An awareness-raising program for procurement officers was conducted in October 2020 and for vendors in April 2021. Additionally, training material was developed for both faculty staff of NAIR and suppliers to IR.

Trainers need to be identified, and their capacities need to be enhanced to address the scale of training requirements. Collaborations with academic institutions can be sought to kick-start the training efforts.

Sub-Tasks	Responsibilities	Timeline
Review of existing procurement and sustainability curriculum in NAIR	NAIR, EnHM, External Consultant	2 months
Strengthening of existing SPP course module based on gap analysis	NAIR	2 months
Identify trainers and build their capacities to conduct the training program	EnHM, Academic Institutions	2 months
Develop training content	NAIR, EnHM, Academic Institutions	3 months
Conduct training programs for procurement officers at NAIR	NAIR and EnHM	Periodic training as conducted by NAIR

Involvement of / Input from other organizations:

- Railways Board
- Research Design and Standards Organisation (RDSO)
- Research & Academic Institutions

Comments:

A Training Program on Building Capacity on Environment and Sustainability for Indian Railways Officials was conducted in July 2020 with a module on SPP.

Awareness-raising program for procurement officers was conducted in October 2020 and for vendors in April 2021. Additionally, training material was developed for both faculty staff of NAIR and suppliers to IR.

2.6.3 Creation of Master Trainers in SPP

Description of Activity

A program for building a cadre of master trainers will be required. A master trainer pool can be chosen from the current faculty pool at NAIR, teaching procurement. Formal collaborations with some of the leading national academic institutions will help to address the scale of training requirements. The objective of training master trainers will not be only equipping them with the resources and teaching tools but helping them develop a SPP curriculum.

The master trainers, once trained, will be further guided through the use of a variety of delivery modes, resources and existing toolkits. NAIR can collaborate with different agencies for delivering the training program for the master trainers. They may also invite faculties of international repute to deliver specific topics. A guidance manual can be developed to provide the necessary information, training resources, and delivery mechanisms.

A Training-of-trainers workshop was conducted for the procurement trainers of NAIR in May 2021. The workshop engaged trainers in suggesting curriculum for SPP. An overview of existing SPP Training programs across the globe and available resources were presented.

Sub-Tasks	Responsibilities	Timeline
Identify a pool of master trainers	NAIR and EnHM	2-3 months
Develop training material and collaborate with leading national academic institutions	NAIR and EnHM, Leading academic institutions	6 months
Conduct master training programs	NAIR and EnHM	2-3 weeks

Involvement of / Input from other organizations:

- Railways Board
- National Academy of Indian Railways (NAIR)

- Research & Academic Institutions
- Indian Railway Institute of Logistic and Material Management (IRILMM)

2.6.4 Document Experiences and Challenges

Description of Activity

The EnHM Directorate and Railways Board will need to monitor and track the pilot performance on a periodic basis for 2.5 years to document experiences. Consultation with various departments and suppliers will be held to understand the challenges that have occurred during the pilot implementation.

A report is to be prepared covering the following for each pilot established:

- Procurement undertaken with sustainability criteria
- Volume and value of sustainable products/services procured
- Contracts drawn and upheld on sustainability performance
- Reduction of environmental and social impact

Consultations with various procurement officials and vendors will be conducted to identify challenges faced during the implementation. The consultation will also capture recommendations and areas of strengthening in the procurement process.

A final report at the end of 2.5 years of the pilot will be drafted on lessons learned and suggestions for improvement. This report will be shared amongst Zonal Controller of Stores (COS), RDSO, NAIR, GeM and inputs on strengthening the SPP initiatives will be sought.

Sub-Tasks	Responsibilities	Timeline
Periodic monitoring and evaluation of SPP pilot	Working Committee, EnHM and Railway Board	Every 6 months for 2.5 years
Consultation with different stakeholders on challenges	Working Committee, Zonal Controller of Stores (COS), EnHM, RDSO, Railways Board	Every 6 months for 2.5 years
Findings Report	Working Committee, EnHM and Railways Board	3 months

Involvement of / Input from other organizations:

- Government e-Marketplace (GeM)
- Ministry of Finance SPP Taskforce Members
- Confederation of Indian Industry (CII)
- Consumer Interest Organizations

3. MEDIUM- AND LONG-TERM ACTIONS

Medium-and long-term actions include all activities that will need to be implemented within 3-5 years and 5-10 years respectively. Challenges encountered during the implementation of the short-term actions will form a basis for the definition of the long- and medium-term actions. The five main medium-/long-term actions consist of 16 activities.

3.1 Developing First Procedures and Institutional Capacities

3.1.1 Establishment of a SPP Steering Committee

Description of Activity

A Steering Committee (SC) needs to be established at Indian Railways to oversee the implementation of SPP and coordinate between various IR departments. Due to the cross-cutting nature of SPP, the composition of the Steering Committee will consist of Railway Board, EnHM, Zonal Controller of Stores (COS), NAIR and RDSO. This committee could be housed in EnHM Directorate and co-chaired with Zonal Controller of Stores (COS) and Finance department representatives. The working committee formed to implement the pilot, may have a representation in the Steering Committee to establish continuity.

The committee needs to adopt, set targets and build on the SPP outline action plan. A roadmap or an implementation plan supported by guidelines for different departments involved in the procurement cycle needs to be formulated.

The structure and functioning of the SC need to be formulated and agreed upon. An ideal set up would include a core top level group with a representation of all key departments and smaller expert groups to fit each stage of the implementation process. The expert groups will coordinate with agencies such as GeM, and members of the Ministry of Finance (MoF) SPP Taskforce, prepare reports and/or discuss strategies with the top-level SC group.

Post the formulation of the structure of the SC, procedures for convening meetings, frequency of meetings, decision-making, roles and responsibilities, review of implementation, qualification of members, and provision of expert technical support need to be drafted.

The SC will be responsible for the following:

- Monitoring the progress of the implementation of the SPP pilot
- Proposing corrective measures, where appropriate
- Coordinating amongst various IR departments/agencies and external organizations
- Approving and signing off the outputs of the pilots (filled in Status Assessment, Legal Review and Market Readiness Analysis, SPP Policy Plan, etc.)
- Developing criteria and standards and oversee certification and ecolabelling of products. In addition, a list of products and manufacturers of approved green products of adequate quality must be maintained by the Steering Committee
- Providing advice and guidance

- Providing a forum to tackle issues that may impede the implementation of SPP and propose ways to address the identified obstacles
- Disseminating and promoting SPP initiatives

Sub-Tasks	Responsibilities	Timeline
Establishment of the structure and functioning of the Steering Committee	Railways Board, EnHM Directorate, Zonal Controller of Stores (COS), NAIR, RDSO	3-4 months
Establishment of expert groups, its composition and functions	EnHM Directorate, Zonal Controller of Stores (COS), NAIR, RDSO	2-3 months
Procedures for convening meetings, frequency of meetings, decision-making, review of implementation, qualification of new members, and provision of expert technical support to be drafted	Steering Committee Members, Railways Board, EnHM Directorate, Zonal Controller of Stores (COS)	1-2 months

Involvement of / Input from other organizations:

- Government e-Marketplace (GeM)
- Ministry of Finance SPP Taskforce Members

3.1.2 Procedures on the development and review of further technical specifications

Description of Activity

This activity describes the procedures for developing technical specifications for additional products and services in the master list (2.2.1) A review of the existing procurement procedures will be essential to understand the stages at which sustainability aspects can be introduced and the method of integration in the procurement cycle.

The Steering Committee, through an expert group can initiate a needs assessment study to be conducted by external consultant teams. The study should include the types of product/services required, the purpose for procurement, and the quantity of the product/service utilised. The needs assessment should explore the possibilities of using a product as a service, reducing demand, exchanging products through departments, and reducing travel-related services.

The needs assessment study can be followed by market research aimed at determining the technical specifications for sustainable products and services already available in the market and the readiness of the vendors to deliver them. The study should identify those products

and services that can easily respond to the inclusion of sustainability criteria in procurement without representing an additional cost.

Based on the inputs provided by the external consultants, the Steering Committee expert groups will need to review existing technical specifications outlined by RDSO and identify changes required to reflect sustainability. A pre-qualification criterion to register vendors with RDSO will be based on their compliance with environmental legislation, implementation of Environmental Management Systems and adherence to national social regulations and standards.

Tools such as Life Cycle Assessment (LCA) can be used to define the product/service's sustainability criteria. A study by external consultant needs to be conducted to identify the environmental impact of product/services at each stage, from raw material extraction to disposal. The approach towards reducing the environmental impacts will assist in developing sustainability criteria for the product.

There are currently various sources of SPP guidelines incorporating environmental and social criteria. These can be adapted in a manner to include those that are important in the IR context based on the lifecycle. Measurable requirements against the sustainability criteria need to be established. For each criterion, a verification method also needs to be identified in terms of manufacturer's certificate, supplier declaration etc. These specifications need to drive the sustainability agenda with vendors and demonstrate the implementation of SPP without a compromise on product quality and functionality.

Ecolabels can provide the environmental criteria associated with a product or service and can be used to help define specifications or be used directly as a requirement for products/services. Further engagement with certification entities to develop standards, for different IR related products and services needs to be organized. Guidelines on testing methodologies, product specifications and codes of practices on certifying products need to be established.

It is preferred that instead of defining the end of life costs, the manufacturers should be agreeable to incorporate the "take back clause" in the contracts.

In order to finalise the SPP technical specification and their evaluation, a workshop needs to be organized. The workshop will focus on finalizing the criteria as well as discuss the models for bid evaluation based on sustainability criteria. Participants of the workshop will include the Steering Committee members, IR officials from procurement and the Environmental Directorate.

A standard bidding document based on the workshop's recommendations, with inclusion of sustainability criteria in the technical specifications, evaluation methodology and contract, will be formulated by the Steering Committee expert groups to guide the issue of tenders.

Sub-Tasks	Responsibilities	Timeline
Conduct a needs assessment study	Steering Committee, External Consultant, Zonal Controller of Stores (COS)	4-5 months

	Government e-Marketplace (GeM)	
Conduct market research	Steering Committee Members, External Consultant, Zonal Controller of Stores (COS) Government e-Marketplace (GeM)	4-5 months
Consolidation of Technical Specifications	Government e-Marketplace (GeM) RDSO Steering Committee-Expert groups	2-3 months
Determination of Pre-qualification and Sustainability Criteria	Steering Committee Members, External Consultant, Zonal Controller of Stores (COS) Government e-Marketplace (GeM)	5-6 months
Conduct of workshop	Steering Committee Members, External Consultant, Zonal Controller of Stores (COS) Government e-Marketplace (GeM)	1-2 weeks
Development of Standard bidding documents	Steering Committee Members, Zonal Controller of Stores (COS) Government e-Marketplace (GeM)	3-4 months

Involvement of / Input from other organizations:

- Government e-Marketplace (GeM)
- MoF SPP Taskforce

Comments:

- Sustainable Procurement Platform: <https://sustainable-procurement.org/resource-centre/>
The Sustainable Procurement Platform is managed by ICLEI - Local Governments for Sustainability. It provides up-to-date news, case studies, events, guidance and more on sustainable procurement from across the world
- EU GPP Training Toolkit: https://ec.europa.eu/environment/gpp/toolkit_en.htm

- Procura+ Manual 2nd edition: A Guide to Cost-effective Sustainable Public Procurement. ICLEI- Local Governments for Sustainability, Freiburg, Germany. 2007
- Sustainable Public Procurement Implementation Guidelines: <https://c2e2.unepdtu.org/wp-content/uploads/sites/3/2016/08/unep-spp-implementation-guidelines.pdf>

3.1.3 Development of Models for Bid Evaluation

Description of Activity

Scores & Weights	Technical Score	Cost Score	Sustainability Score	Total Score	Rank	Successful Bidder
	64	20	16			
Bidder 1	400	2	160	282	3	
Bidder 2	200	6	370	1392.12	2	
Bidder 3	700	4	350	2695.24	1	WINNER

The models for bid evaluation will determine which bid wins the contract and how sustainable the contract will actually be in practice. Models for bid evaluation vary from selecting bids with the lowest price to a detailed methodology of assigning weights and assessing non-cost factors. The Steering Committee can initiate the development of models for bid evaluation based on the products and services selected.

The bid evaluation model is the decision-making process that will be used to judge the various bids from suppliers. It ensures that all bids are treated equally, that sustainability risks are managed, and that the award decision can be justified.

A methodology following composite scoring with weights of bid evaluation includes simultaneous consideration of technical, costs and sustainability parameters. Weights are assigned to technical, costs and sustainability parameters. Each parameter is scored based on its performance. The product of scores and weights are calculated and the total weighted score is obtained. The highest total weighted score is the successful bidder.

The section below demonstrates the composite scoring with weights of bid evaluation:

Composite Scoring with Weights

- Cost weight = 20%
- Remaining 80% split between technical and sustainability score as (80% and 20%) of 80%

The life cycle costing (LCC) approach is a model that can be used to evaluate bidders. The concept of LCC looks at the cost of a product incurred throughout the life cycle. A sustainable product may have a higher purchase price than a conventional product, however, it is cost-effective when one compares the overall costs incurred – purchase as well as during its use, maintenance and disposal phases. This approach may be considered in future.

Sub-tasks	Responsibilities	Timeline
Development of models for bid evaluations	Steering Committee expert groups, Manufacturers External Consultants	3-4 months
Conduct of Workshops	Steering Committee Members, External Consultant, Zonal Controller of Stores (COS) Government e-Marketplace (GeM)	1-2 weeks

Involvement of / Input from other organizations:

- Government e-Marketplace (GeM)
- Zonal railways and production units

Comments:

List of tools for Life Cycle Costing:

- The European Commission's calculator for LCC for vehicle procurement <http://www.cleanvehicle.eu/?id=427>
- The DEEP Toolkit – Supporting Public Authorities in Energy Efficient Procurement - Developed by ICLEI – Local Governments for Sustainability, this toolkit includes an LCC analysis tool (excel based spreadsheet) and covers issues such as: energy and water consumption, maintenance and replacements. For more information or to download the tool visit: <http://www.iclei-europe.org/index.php?id=4650>
- A tool for assessing both LCC and CO2 emissions in procurement, developed within the SMART-SPP project: <http://tool.smart-spp.eu/smartspp-tool/registration/login.php>
- An LCC tool developed within the BUY SMART project: <http://www.buy-smart.info>

3.1.4 Development of a SPP Guideline

Description of Activity

The key objective of this activity is to develop a generic guidance manual on updating and adapting procurement guidelines for different products and services that the Indian Railways could adopt. This guideline will be prepared to assist procurement officials in implementing SPP, including decision-making to ensure a smooth transition. The Steering Committee should initiate the development of the SPP guideline with a working group supported by external consultants.

The guideline should highlight how sustainability is incorporated at all stages of procurement. In addition, the rationale behind the development of sustainable procurement recommendations and the sustainability criteria should be outlined.

The guideline can cover the following details:

- Scoping of the product: Scoping of the product variety based on the volume of use or environmental impact
- Review of the procurement process and the possibility of adopting the provisions in the General Financial Rules (GFR) and Manual for Procurement of Goods, 2017 (MPG)
- Identification of key environmental impacts across the lifecycle of the product/service
- Review of national environmental and social regulations
- Development of sustainable criteria
- Review of existing bid documents and development of standard bidding documents with the inclusion of sustainability criteria in the technical specifications
- Bid evaluation (refer to 3.1.3): A framework for evaluating bids with a scoring system to check the bids on vendor pre-qualification, evaluation of the goods/service for the sustainability criteria listed in the technical specifications and life cycle costing (LCC).
- Award and Contract Management: Stipulation of sustainability commitments on warranties, performance parameters, responsibilities of the supplier, maintenance schedules and end of life management
- Continuous improvement: To be updated periodically on challenges and experiences
- Case studies: International experiences and sustainable procurement guidelines created by other organizations

The resulting guideline from this activity will be distributed to the Steering Committee for recommendations and approval.

Sub-Tasks	Responsibilities	Timeline
Development of SPP Guideline	Steering Committee expert groups, External Consultants	6-8 months
Revision and approval of guidelines	Steering Committee RDSO Zonal Controller of Stores (COS) NAIR	2-3 months

Involvement of / Input from other organizations:

- Government e-Marketplace (GeM)
- Zonal railways and production units

Comments:

- Sustainable Procurement Platform - <https://sustainable-procurement.org/resource-centre/>

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- The Sustainable Procurement Platform is managed by ICLEI - Local Governments for Sustainability. It provides up-to-date news, case studies, events, guidance and more on sustainable procurement from across the world
 - EU GPP Training Toolkit https://ec.europa.eu/environment/gpp/toolkit_en.htm
 - Green Public Procurement in the Asia Pacific Region <https://www.apec.org/Publications/2013/06/Green-Public-Procurement-in-the-Asia-Pacific-Region-Challenges-and-Opportunities-for-Green-Growth-an>
 - Green Public Procurement in China: https://www.greengrowthknowledge.org/sites/default/files/downloads/resource/UNEP_green_public_procurement ecolabelling_China_Japan_Korea_Thailand_report.pdf
 - Sustainable Public Procurement Implementation Guidelines: <https://c2e2.unepdtu.org/wp-content/uploads/sites/3/2016/08/unep-spp-implementation-guidelines.pdf>
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3.1.5 Building Up Links to Existing Ecolabels and Certifications

Description of Activity

The activity describes the building up of links to existing ecolabels and certifications. An ecolabel identifies environmentally preferable products / services that are based on standards or criteria. Ecolabels are a voluntary method of environmental performance certification and labelling, awarded by an impartial third party to products that meet established environmental leadership criteria.

A list of existing ecolabels and certifications need to be identified. This activity can be done in parallel while developing the further technical specifications (3.1.2) by the external consultants. The sustainability criteria developed for SPP can be mapped to the certification criteria of the ecolabels and certifications. In addition, ecolabels and certifications can be used to help define specifications.

Recommendation on the use of ecolabels as one of the means of verification of compliance to sustainability criteria needs to be reported.

Ecolabels may not be available for all types of products / services. Some focus on a single environmental attribute (e.g. energy efficiency); some consider multiple environmental attributes; and some focus on a single phase of the lifecycle (e.g. material sourcing). Further, there are diverse approaches to procedural aspects of conforming standards and ecolabels, such as the process and verification/certification/accreditation methods. The evaluation criteria in the tenders should not specify the ecolabels or certifications, but the equivalent product standards. The ecolabels should be one of the mechanisms for checking vendor compliance with product/service standards.

Based on the recommendations on the use of ecolabels and certifications, the Steering Committee and RDSO can engage with certification entities to develop standards for different IR related products and services. The National Standards Body of India- BIS working under the aegis of Ministry of Consumer Affairs, Food & Public Distribution, has issued 52 Eco Mark standard licenses to different product manufacturers. It has 292 standards (IS Codes) with ecolabel criteria that can be used to shortlist products for implementation of SPP. Bureau of Energy Efficiency under the Ministry of Power has a star rating system for electrical appliances to encourage the efficient use of energy. Certifications such as GreenCo and GreenPro by the Confederation of Indian Industry

(CII) could be considered as a requirement / supporting qualification for contractual agreements. However, the present coverage of GreenPro is limited to the construction industry. To overcome this, Indian Railway would need to partner with organizations to build capacity to obtain such certifications.

Guidelines on testing methodologies, product specifications and codes of practices on certifying products need to be established with RDSO.

Sub-Tasks	Responsibilities	Timeline
Identification of ecolabels and certifications relevant for SPP	Steering Committee, RDSO External Consultants	3-4 months
Engagement with different agencies to use and develop certifications, standards and ecolabels for IR	Steering Committee, RDSO BIS BEE CII	4-6 months

Involvement of / Input from other organizations:

- GeM
- MoF SPP Taskforce
- Confederation of Indian Industry (CII)
- Bureau of Energy Efficiency (BEE)
- Bureau of Indian Standards (BIS)

Comments:

- GreenCO Rating System: <http://www.greenco.in/gco/aboutgreencorating.php>
- BEE Star labelled appliances: <https://beeindia.gov.in/content/star-labelled-appliances>

3.2 Program for Upscaling SPP Application

3.2.1 Development of a Program for Expanding/Upscaling the Pilot

Description of Activity

To upscale the pilot SPP efforts, the Steering Committee will have to study the findings from the pilot program. Consultation with various Controller of Stores and its various departments and suppliers will be held to understand and document the challenges that have occurred during the pilot implementation.

The review report of the short-term actions and the pilot project will be studied by the Steering Committee. The results of the pilots will be analysed and reflected for:

- Procurement undertaken with sustainability criteria
- Volume and Value of sustainable products/services procured
- Contracts drawn and upheld on sustainable performance
- Reduction of environmental impact

Findings of this report will be shared amongst different IR departments including EnHM, Railways Board, Zonal Controller of Stores (COS), NAIR and RDSO. A workshop will be held to discuss the outcomes of the pilot and identify potential challenges. Recommendations on overcoming the barriers that can be adapted for the medium- and long-term actions will be discussed. The improvement of actions of the first phase is key for a successful implementation of the long- and medium-term actions (3 years and beyond).

A program or roadmap for upscaling the pilot will need to be formulated by the Steering Committee based on the experiences in implementing short-term activities. The program will include targets, possible zonal railways, timeframe, teams responsible for implementation, experiences on overcoming barriers and mechanism for monitoring performance.

Sub-Tasks	Responsibilities	Timeline
Consultation with different stakeholders on challenges and study of the pilot implementation report	Steering Committee, Zonal Controller of Stores (COS), EnHM, RDSO	2-3 months
Review of report on short term actions and pilot	Steering Committee	2-3 months
Workshop to discuss pilot outcomes and challenges	Steering Committee, Zonal Controller of Stores (COS), EnHM, RDSO	1 week
Prepare a program for expanding/upscaling the pilot	Steering Committee	2-3 months

Involvement of / Input from other organizations:

- Government e-Marketplace (GeM)
- MoF SPP Taskforce

3.2.2 Formulation of an Upscaling Plan

Description of Activity

Once the program for expanding the pilot is adopted, an upscaling plan will be established outlining specific tasks with responsibilities. This plan will be drafted by the Steering Committee in consultation with the EnHM Directorate, Controller of Stores.

It is recommended that the upscaling plan will be guided by the needs assessment and market research studies conducted in activity 3.1.2. The plan should establish targets for green procurement that help to achieve the desired level of performance; these targets can be graduated and made more ambitious over time depending on the maturity of the program and the market for green products. This target will require setting up a share (or percentage) of procurement that would need to integrate sustainability performance.

Initially, the implementation of SPP can start with a small range of products/services for which the market is already reasonably well established and then gradually expand as the program matures. This makes it simpler for IR to engage in green procurement without the need to undertake complex assessments with inadequate expertise.

This plan needs to be communicated to all divisions of the Railway Board and other agencies, particularly to the officials affected and to vendors who have a role to play in implementing the program. This will provide lead-time for vendors to upgrade their sustainability performance and for procurement officials to increase their expertise in integrating the same in the tendering process.

A standard bidding document based on the recommendations of the workshop, with inclusion of sustainability criteria in the technical specifications, evaluation methodology and contract will be formulated to guide the issue of tenders. These specifications will also ensure that there is no compromise on product quality and functionality.

After analysing the potential responsiveness of the market and the national business sector to SPP tenders released during the pilot session, a framework for evaluation of bids will be developed. This framework will have a scoring system to check the bids on SPP for vendor pre-qualification on sustainability criteria where appropriate, evaluation of the goods/service for the sustainability criteria listed in the technical specifications and the option of using life cycle costing.

Contracting in the SPP context is highly dependent on the product performance during its use phase; hence a contract management framework is essential to be developed. This contract stipulates clauses on warranties, performance parameters, responsibilities of the supplier, maintenance schedules and end of life management. Sustainability requirement criteria for each of the above clauses will be introduced to bind the supplier to deliver a sustainable product/service across its life cycle .

The upscaling plan along with the standard bidding documents, award criteria and contracting framework will be circulated to the key IR departments and suggestions for strengthening will be sought. Post the incorporation of suggestions, the plan will be adopted for implementation.

Sub-Tasks	Responsibilities	Timeline
Develop upscaling plan and communication of plan to all IR departments	Steering Committee, Zonal Controller of Stores (COS), EnHM	6-7 months
Develop standard bidding documents	Steering Committee, Zonal Controller of Stores (COS),	4-5 months

RDSO		
Develop award criteria	Steering Committee, Zonal Controller of Stores (COS), EnHM, NAIR, External consultants	5-6 months
Develop contracting framework	Steering Committee	2-3 months

Involvement of / Input from other organizations:

- Government e- Marketplace (GeM)
- MoF SPP Taskforce
- Railways Board
- National Academy of Indian Railways (NAIR)
- Research & Academic Institutions
- Indian Railway Institute of Logistic and Material Management (IRILMM)

3.2.3 Continued Vendor Engagement

Description of Activity

This activity describes the process of continued vendor engagement on a periodic basis. Engagement with the vendors must be constant to gain insight into new products and technologies in the innovation pipeline.

The following methods can be used to engage with and include new suppliers for SPP:

- Preliminary market consultations by using
 - Pre-tender discussions to gather market information for later procurement
 - Inform potential suppliers of the procurement needs
 - Expectations on what the market can supply
 - Cost implications
- Trade fairs/ Industry days/ Technology updates where new products/services can be showcased
- Facilitated dialogues with clean technology/industrial clusters, Chambers of Commerce and Industry
- Events and collaboration with Research Institutions that foster innovation

Sub-Tasks	Responsibilities	Timeline
Engage with suppliers	Steering Committee, Zonal Controller of Stores (COS)	6-8 months

Develop new product criteria	Steering Committee, Zonal Controller of Stores (COS), RDSO	6-8 months
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Involvement of / Input from other organizations:

- Government e- Marketplace (GeM)
- MoF SPP Taskforce
- Research & Academic Institutions
- Indian Railway Institute of Logistic and Material Management (IRILMM)

3.3 Communication and Awareness

3.3.1 Development of Communication Strategy

Description of Activity

To explain and promote concept of SPP, a communication strategy needs to be developed. IR's Public Relations Department, NAIR and Steering Committee shall develop this strategy targeting each stakeholder by identifying the core message to be conveyed, type of message and the communication tool to deliver the same. Based on the communication strategy, the communication material would be developed with the help of external consultants

Key stakeholders and the communication channels identified include

1. Internal communication for IR staff: Newsletter and intranet (amongst others) to promote SPP and provide information on its planned implementation.
2. The vendors to be informed about the shift towards SPP and the process of implementation through webinars, workshops and information on the website.
3. The business community, in general, should also be targeted to present the planned SPP activities of IR.
4. General citizens or the end-users of IR services should also be informed of the SPP initiatives.

A communication implementation program will be developed to conduct communication and awareness campaigns. A calendar and list of the departments responsible for monitoring and evaluating the communication operations will also be formulated.

Sub-Tasks	Responsibilities	Timeline
Develop communication strategy on SPP for each stakeholder	Public Relations Department- IR, Steering Committee, NAIR	3-4 months

Develop communication material	Public Relations Department- IR, Steering Committee, NAIR, External Consultant	6 months
Conduct communication and awareness-raising campaigns for each stakeholder groups	Public Relations Department- IR, NAIR and EnHM	8-12 months
Involvement of / Input from other organizations:		
<ul style="list-style-type: none"> External SPP Capacity Building training institutions 		

3.3.2 Communication towards Internal and External Stakeholders

Description of Activity

In the process of implementing SPP, early and customized communication with stakeholders is required. A SPP communication plan with a clear goal will be essential to ensure the successful implementation of the new procurement practice. Continuous communication needs to be carried out in order to convey information, raise awareness, gain supports, offer assistance and encourage action. Beside raising awareness and securing commitment within IR (see 3.3.1), the communication plan should be designed to inspire and push other public bodies towards SPP practices.

For the internal communication, all channels and tools used by IR such as newsletter and intranet (amongst others) should promote SPP and provide information on its planned implementation. The communication should contain clear and consistent messaging and should be customized to the needs of IR's staff. That way not only the awareness, but also the acceptance of SPP can be improved. Getting the right messages across has significant impact on the success of SPP implementation and eventually resulting in a paradigm shift in IRs procurement (i.e. SPP as a tool to meet environmental commitments, SPP to drive innovation, to save money in the long-run).

Communicating with external stakeholders (i.e. vendors, prospective bidders, industrial associations, manufacturers, the public), and informing them about the shift towards SPP and how it works is equally important. Clear and customized messages about the goals and benefits of SPP will be essential for successful communication. The private sector can then adapt its practices in order to comply with IR's future SPP requirements. The business community in general should also be Informed about the planned SPP activities of IR. Finally, the public should be addressed with customized messages about the SPP activities of IR. The SPP communication plan should be carried out by a dedicated team, including communication experts.

Sub-Tasks	Responsibilities	Timeline
Engage SPP champions and private industry players	Public Relations Department- IR, Zonal	Before launching the implementation (2021), then

	Controller of Stores (COS), Steering Committee	regular expansion of the program
Information material for general awareness	Public Relations Department- IR, Zonal Controller of Stores (COS), Steering Committee	Before launching the implementation, then continuous updates (integrating feedbacks and relevant findings)
Participating in relevant events	Public Relations Department- IR, Zonal Controller of Stores (COS), Steering Committee	On-going
Involvement of / Input from other organizations:		
n/a		

3.4 Training and Capacity Building

3.4.1 Development of Training Materials on SPP

Description of Activity

This activity describes the procedure for the development of training materials on SPP. One part of the content needs to address the overall SPP framework, the guidelines and methodologies of implementation, challenges relating to procurement and case studies of SPP implementation. The other part of the content needs to be designed with a specific context to Indian Railways covering legal framework, prioritized products/services, procurement planning, SPP action plan, and the roadmap for SPP implementation.

Existing material prepared for the Training on Environment and Sustainability in July 2020 and the Training of the Trainers Program conducted by switch Asia in April 2021, can be used as a base for content preparation.

The learning outcomes, trainers and the pedagogy needs to be determined to steer the development of training content. The training content based on the target audience and professional functions, not limited to, could include the following topics

Component 1: Awareness-raising

- Definition of sustainable procurement
- Alignment with Sustainable development goals
- Basic procurement practices in IR
- Current Green Initiatives undertaken by Indian Railways

Component 2: SPP Approach and Action Plan

- Scoping of Products and services

- Market Engagement
- Timelines

Component 3: SPP implementation

- Applying sustainability criteria in the procurement process (updated to current environmental requirements)
- Preparation of technical specifications with social considerations, tender documents.
- Evaluation of pre-qualification and bidding documents
- Tools, resources and practical tools to implement SPP
- Sharing best practices
- Monitoring, measuring and reporting on progress on SPP
- Communicating effectively about SPP with internal and external stakeholders

Training materials, contents of workshops and courses should be standardised. Training material and content should be updated annually. Information and experience sharing of SPP implementation should also be integrated.

Sub-Tasks	Responsibilities	Timeline
Review the existing curriculum for procurement at NAIR	NAIR, External Consultant	3-4 months
Prepare learning outcomes and determine pedagogy for training	NAIR, External Consultant	4 months
Develop training material	NAIR, External Consultant	4-5 months

Involvement of / Input from other organizations:

- External SPP Capacity Building training institutions

Comments:

Refer to the following resources for content preparation

- UNEP SPP Implementation Guidelines:
<https://www.oneplanetnetwork.org/resource/sustainable-public-procurement-implementation-guidelines>
- EC Europa GPP: http://ec.europa.eu/environment/gpp/index_en.htm
- Procura+ Manual 2nd edition: A Guide to Cost-effective Sustainable Public Procurement. ICLEI - Local Governments for Sustainability, Freiburg, Germany. 2007
- Blue Angel ecolabel (Germany): <http://www.blauer-engel.de>
- Nordic Swan (Scandinavian ecolabel): <http://www.svanen.nu>
- ICLEI - Local Governments for Sustainability & Ecoinstitut Barcelona: European Commission Green Public Procurement (GPP) Training Toolkit - Module 3: Purchasing

Recommendations. Copying and Graphic Paper. Background Product Report. (2008), Brussels, Belgium

3.4.2 Organization of Training for Procurement Officers at NAIR

Description of Activity

SPP training for procurement officers at NAIR should be integrated into existing training programmes to incorporate training objectives into their job functions. The training programme should be designed to ensure the implementation of SPP initiatives at all stages of the procurement cycle, support and guide all officials involved. Training would aim to provide procurement officers specific knowledge about SPP, certifications, sustainability criteria and evaluation of bids in the procurement process.

The target audience for the training programme to include:

- IRSS Probationers and Inductees - 1 day
- Refresher Course for existing Procurement Officials - 4 hours
- Top Management and Officials related to departments such as RDSO - 2 hours

Based on the learning outcomes and pedagogy, the training may take the form of face-to-face workshops, aided by guidebooks and e-learning components, or have a blended approach. The training programme should also promote the exchange of information and sharing experiences of integrating sustainability criteria in procurement.

The master trainers will be responsible for the delivery of the training programs. Collaboration with Academic institutions can also be initiated to address the scale of training requirements.

The frequency of the refresher course for existing Procurement Officials could be four times a year and for the Top management and officials from departments like RDSO can be twice a year.

A refresher training is to be provided on a regular basis to keep issues up to date and procurement officials apprised. Refresher courses are also an opportunity to troubleshoot any challenges that may have arisen during implementation and refine the approach taken.

Further the training programs may be transformed into e-learning modules to enable 24X7 access to the procurement officers. This will help in building capacities of the procurement officers in SPP in a short time, on a scale.

Sub-Tasks	Responsibilities	Timeline
Develop training calendar	NAIR and Steering Committee	2-3 months
Collaborate with Academic Institutions and identify trainers	NAIR Academic Institutions	4 months

Conduct training programs, including launch of an e-learning program	NAIR Academic Institutions	Ongoing - as per the training calendar
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Involvement of / Input from other organizations:

- Zonal Controller of Stores (COS)
- RDSO
- Indian Railway Institute of Logistic and Material Management (IRILMM)

3.4.3 Establishing a Medium- and Long-term Training Programme

Description of Activity

This activity describes the establishment of medium- and long-term training programs for Indian Railways officials, procurement officers, and vendors. NAIR should increase and adopt more training programs related to sustainability for all their staff to ensure a smooth transition of SPP.

A more advanced training program can be detailed out once the SPP process reaches a definitive stage. This training program can document and bring out experiences in the implementation of SPP.

It is recommended to develop a Centre of Excellence for SPP in collaboration with the Research Design and Standards Organisation (RSDO) and NAIR organization. This Centre could promote Innovation not only within the Indian Railways but also spread awareness amongst vendors. The research conducted under this collaboration would also be beneficial to other sectors implementing SPP in India. The Centre of Excellence can help create procurement guides for different products, information brochures and newsletters on the topic of sustainable procurement.

The training programs should also be supported with the development of a knowledge forum. Through this forum, procurement officials, IR staff and vendors could share recent information on green technology, products and services, influence collective purchasing power and develop common procurement standards based on best practices.

The SPP guideline developed can be regularly update based on feedback and challenges faced by the procurement officials.

Apart from the training provided to procurement officers In the Indian Railways, there Is a need to increase vendors' capacity to adopt SPP practices throughout their supply chain. Indian Railways could support this by organising annual events for vendor engagement and providing financial as well as advisory assistance to SMEs to meet the sustainability criteria.

Sub-Tasks	Responsibilities	Timeline
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Develop a more advanced training program for procurement officials and vendors	NAIR Steering Committee Academic Institutions	8 months
Create a Centre of Excellence in SPP	NAIR RDSO	12 months
Create a knowledge Forum	NAIR RDSO	Ongoing

Involvement of / Input from other organizations:

- Government e-Marketplace (GeM)
- MoF SPP Taskforce
- Zonal Controller of Stores (COS)
- Indian Railway Institute of Logistic and Material Management (IRILMM)

3.5 Monitoring and Review

3.5.1 Development of Indicators to Track Performance

Description of Activity

Continuous monitoring should provide adequate and enough information / data to review the approach and actions. It should also be able to evaluate current policies and provide information in order to update the SPP Action Plan regularly. Hence, the development of indicators will be needed through which SPP performance can be properly tracked. In several recent SPP projects around the world, experiences have been shared from which IR can benefit while setting up its own customized MR system.

In order to track the SPP performance, three levels should be considered: **impact** (e.g. social, environmental or economic benefits), **outcome** (e.g. amount of SPP volume) and **output** (e.g. number of trainings conducted, number of communication activities). For each level, specific targets should be set in place in order to monitor the progress of SPP implementation. Accordingly, indicators will need to be defined to examine, if the predefined targets were met and if processes are well designed and run smoothly. With the help of the indicators, reasons for failures, missing know-how or competence, as well as corrective actions can be identified (among others).

For the development of the indicators various **environmental, social and economic aspects** shall be considered:

- Are the environmental goals achieved? How is the contribution to energy efficiency and reduction of environmental impact (compared to previously procured products)?
- What are social benefits / impacts generated by SPP?

- How is the market impacted? Will the prices go up or down in the future? What is the difference between current initial and lifecycle product costs compared to past conventional products' costs?

The defined indicators will cover the short- (2 1/2 years) as well as the medium- and long-term (3 years and beyond).

Sub-Tasks	Responsibilities	Timeline
Development of indicators	Railway Board, External Consultants	Before implementation

Involvement of / Input from other organizations:

- Ministry of Railway - Railway Board
- Zonal Controller of Stores (COS)
- Research Design & Standards Organization (RDSO)
- Rail India Technical and Economic Services Ltd

3.5.2 Implementation of Monitoring System and Impact Assessment

Description of Activity

Subsequent to the development of targets and indicators (see 3.5.1), a SPP monitoring system can be set up at IR. All previously defined targets need to be monitored in this activity.

The main purpose of the monitoring system is to track the progress against set targets or commitments toward SPP. If targets are missed, IR and the relevant actors will need to identify the reasons for failure.

Starting with the output level, all supporting activities of the SPP implementation will be monitored. These include: the conduct of trainings (NAIR), the conduct of communication activities (communication experts and involved IR departments), the set-up of technical specifications (EnHM and Railway Board). All involved entities are obliged to monitor if all processes of each activity run smoothly, if targets are met or missed. If targets are missed, the responsible agency should increase its efforts and take corrective actions. In general, processes should be well-designed and efficient and competencies clearly allocated.

With regard to the outcome level, existing processes shall be used, which should ensure readily available data, such as SPP share of IR procurement or amount of SPP volume. In order to allow for a user-friendly monitoring system for IR, it should be integrated into the existing public procurement monitoring system.

Once the short-term actions have been implemented, the monitoring system could additionally determine the environmental and social impact of the products and services procured within the scope of SPP. Measuring the environmental benefits of SPP may base on: the number of products purchased and the individual environmental performance of IR. As a first step the

products main environmental characteristics (product based) or environmental parameters (performance based) should be identified and determined as impact factor (e.g. energy consumption, GHG emissions, water consumption, etc.) in order to measure the environmental impacts. Subsequently, proxy indicators will be chosen to compare the environmental performance of green products with the environmental performance of the products procured up till now. The difference will be multiplied with the quantity of procured products.

In addition to the environmental impacts, financial benefits as well as market impacts can potentially be monitored. The financial impact can be monitored according to the initial costs as well as the life-cycle costs. A comparison of current initial costs and past initial costs of the same kind of products will be conducted. With regard to life-cycle costs, a comparison of green and past conventional products should be conducted. The market development of individual sustainable / green products can also be part of the monitoring. This can capture the impact of SPP on the provisioning of innovative and competitive solutions by Indian producers. A market survey could be conducted for certain product groups to monitor the impact on the Indian market and the market share of sustainable / green products.

The results from the monitoring will need to be documented thoroughly. They can also be useful for the SPP communication plan by highlighting successes with regard to the SPP implementation.

Sub-Tasks	Responsibilities	Timeline
Implementation and set-up of the monitoring system	Railway Board and RDSO	9 months
Collect data	Railway Board and RDSO	Regularly (monthly) after implementation

Involvement of / Input from other organizations:

- Ministry of Railway - Railway Board
- Zonal Controller of Stores (COS)
- Research Design & Standards Organization (RDSO)
- Rail India Technical and Economic Services Ltd

3.5.3 Adaptation / Update of the Action Plan

Description of Activity

Continuous data collection, monitoring and periodic reviews are essential to draw conclusions and update the action plan. In order to secure a smooth transition from the short-term actions, the long-term actions will be based on the experiences gathered during the first phase. Not only a review of targets achieved (or not) will be conducted, but stakeholders shall be interviewed, and experiences across all supporting activities (such as training and communication, awareness-raising, etc.) should be considered.

Evaluating and reviewing the short-term actions and set targets will be essential to start with the long-term actions. Usually, the review of the short-term actions will be undertaken after around 2 ½ years. Results will be reviewed and reflected upon and long-term actions will be adapted, if needed. This way the SPP implementation phase as a whole will be evaluated before the long-term actions can be set in place. The Steering Committee will need to adopt the modified action plan prior to its implementation.

Sub-Tasks	Responsibilities	Timeline
Conduct periodic review	Steering Committee, External Consultants	Annually
Update the action plan	Railway Board, Steering Committee, External Consultants	On a 2 to 3 -year basis

Involvement of / Input from other organizations:

- Ministry of Railway - Railway Board
- Zonal Controller of Stores (COS)
- Research Design & Standards Organization (RDSO)
- Rail India Technical and Economic Services Ltd



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