

CLIMATE
FRIENDLY

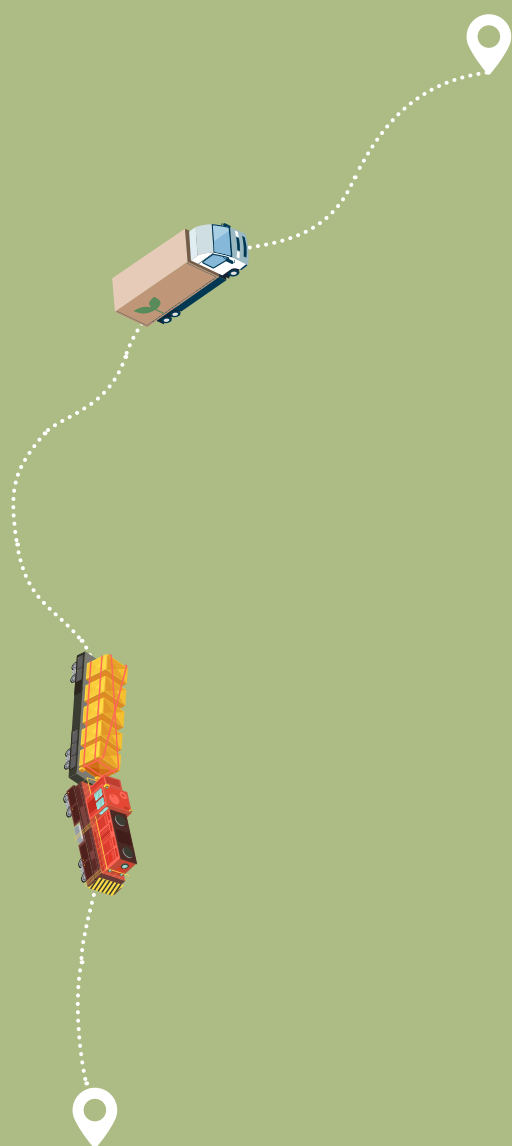
FREIGHT
TRANSPORT
IN INDIA

(GREEN FREIGHT)

KICK-OFF WORKSHOP PROCEEDINGS

19 February, 2020







FREIGHT TRANSPORT IN INDIA

(GREEN FREIGHT)

The Logistics Division of the Ministry of Commerce and Industry (MoCI), Government of India and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) India, are jointly implementing the “Climate Friendly Freight Transport in India (Green Freight)” project. As part of the International Climate Initiative and Indo-German Development Cooperation, the Green Freight project has been commissioned by the Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMU).

The objective of the project is to provide strategies and technical solutions to the decision-making agencies at the national, regional/local level to develop freight transport in India in a climate friendly and efficient manner to support the India’s Nationally Determined Contributions (NDCs).

As part of the project, GIZ will support national and state-level partners, and private sector in making the Indian freight and logistics sector climate-friendly and efficient. Measures for improved logistics management and the introduction of climate-friendly technologies will be implemented in a selected corridor.

An implementation agreement for the Green Freight project was signed between Logistics Division and GIZ on 30 January 2020. A multi-stakeholders kick-off workshop (for the programme see annexure-A) was held on 19 February 2020 to introduce the project and its objectives to all concerned stakeholders and jointly select the logistics corridor.



Mr Roland Haas, Senior Transport Advisor, GIZ Germany welcomed all the participants to the kick-off workshop and asked the participants to introduce and tell the others about their motivation to work in the logistics sector. The responses are compiled and presented in a form of word cloud below.



Mr Swarup, Joint Secretary (Logistics), MoCI started his speech with the national logistics policy and mentioned that greening freight and reduction in the carbon emissions through the movement of freight is one of the key objectives of the policy. He said that as the objective of Green Freight project is aligned with the policy objective. He mentioned that the project is designed in such a way that the measures can be piloted in a selected corridor and the learnings can be upscaled to other corridors.

trucks, driver trainings, and could be multiple interventions that would help in making a modal shift. Mr Swarup thanked everyone for joining and requested for fruitful discussions.

Mr Sivasailam, Special Secretary (Logistics), MoCI welcomed all the participants and appreciated BMU's support for the Green Freight project. He said that Logistics Division is looking forward to work with GIZ and other stakeholders through the project to achieve the project objective. He also appreciated the officials from Logistics Division for developing and designing the Green Freight project. He welcomed all the participating institutions who are interested and crucial in collaboration for the implementation of the measures even beyond the project duration. He acknowledged the importance of all the institutions incl. Petroleum Conservation Research Association (PCRA), AITWA, Ministry of Shipping, Delhi-Mumbai Industrial Corridor (DMIC), and other stakeholders in the sector. He referred to the following presentation by GIZ on project activities and suggested to include new activities based on the local context. This



Mr Swarup said that corridor selection is one of the agenda points of the kick-off workshop. He emphasised that stakeholders (truck operators, transport welfare associations, freight and logistics companies, start-ups, etc) play a crucial role in the implementation of the measures and the project would like to involve all stakeholders in the selection process. Further, he invited inputs from the industry experts such Chetak Logistics, All India Transporters Welfare Association (AITWA), and others in the identification of appropriate measures for the selected corridor. Measures may include piloting aero-dynamic



would be a good opportunity to make necessary changes to be included in a baseline study.

Further, he suggested looking at the possibility of promoting technical measures such as conducting trials of electric-trucks as done in Germany and the United States of America. He emphasised that India has good terrain variations and climatic conditions to test the e-trucks. The Special Secretary ended his talk mentioning that the presence of German automobile industry in India along with other agencies will strengthen the implementation of green freight project in a successful and sustainable manner.

Mr Doering, Director & Cluster Coordinator, Sustainable Urban & Industrial Development (SUID), GIZ India welcomed all the officials from the ministry and other stakeholders present in the workshop. He said that GIZ is Government owned cooperation agency and commissioned by various German ministries and other agencies. Worldwide, there are over 20,000 employees and an annual turnover 3 billion euro. In India, there are over 350 staff of which 70 per cent are Indian nationals. Mr Doering mentioned that India has the biggest portfolio worldwide with four different cluster of projects. Mr Doering himself heads the SUID cluster which has projects on housing, sanitation, transport, industries, Ganges rejuvenation among others. Other clusters include energy and environment. At the end, he mentioned that involving private sector is

very crucial for implementing the green freight project as rightly said by the Special Secretary.



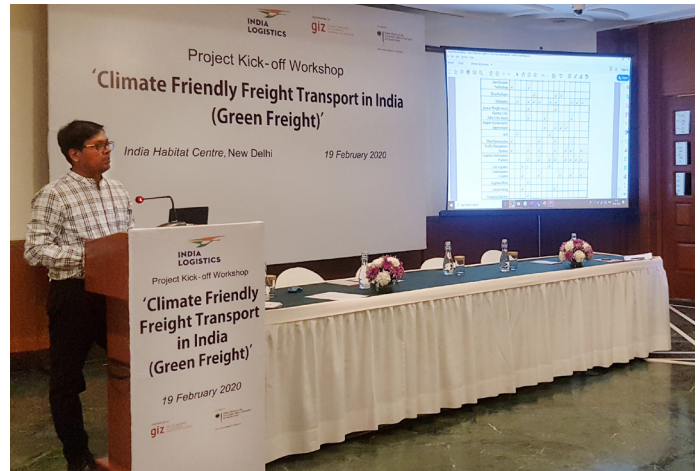
Mr Gordon Telling, Technical Expert, Green Freight project, gave a short presentation that set out the fundamental principles of "Green Freight", particularly how to identify and implement measures that minimised the environmental impacts of logistics, e.g. noise, carbon dioxide emissions, noxious emissions, etc. He went on to outline the key elements of the Green Freight project and how these were aligned with reducing the environmental impacts. He emphasised that the sponsor of the project, BMU- has its focus on Carbon reductions (i.e. reduced carbon intensity per tonne km), but that a broader package of benefits – both environmental and economic – could be derived. (presentation of Mr Telling can be referred at annexure B). He went on to summarize the discussions that had already taken place regarding the choice of corridor between GIZ and MoCI. Candidate were Delhi Mumbai Dedicated Freight Corridor (DMDFC) and the corridor between Bengaluru and Chennai. However, it was felt that this latter option was too short to be useful considered for modal shifts, i.e. road to rail, so the Delhi-Mumbai option was selected.





Next steps – GIZ will commission a more detailed baseline study of the current patterns of traffic along the chosen corridor. This will be developed using internal and external staff and will be in close consultation with a larger stakeholder group. MoCI already has a large amount of data and this will be analysed and supplemented to build a strong evidence base to inform the future choices about demonstration activities during the later stages of the project.

Mr Kasinath Anbu, Technical Expert, Green Freight project, then presented a summary of the GIZ and ADB jointly organised workshop titled “Green Freight and Logistics in Asia: Delivering the Goods, Protecting the Environment” that took place in 2015 in Singapore. The report from that event included a list of potential measures (Annexure C) that could be implemented to reduce carbon emissions. It



shows challenges and solutions for green freight by various countries (Annexure D). The audience considered the measures on the list. Potentially, piloting of some of these measures could be implemented along the selected freight corridor (DMDFC).



Question and Answers session

1.JS, MoCI:

Under the project, are we looking at only carbon emissions from transport or can we take up packaging norms?

Mr Telling and Mr Haas:

Could be taken-up under the project if packaging norms emerge as an important aspect that would contribute to environmental benefits in the baseline study.

2. SS, MoCI

Referring to the presentation on the aspect of fuel efficient, SS mentioned about the green freight aspect of the national logistics plan and suggested to develop an approach to fuel efficiency by developing a road map and module for electric-vehicles. This could be on a selected route or within the port, trailers connecting to the container freight stations (CFS) or to the stacking yards and conduct large scale trails including operations and maintenance aspects. He emphasised that such large-scale trails

demonstration during the project duration would help in assessing the economic and environmental impacts.

Mr Telling

Appreciating the idea, Mr Telling said that GIZ would be glad to support in such interventions and reiterated that green freight is Ministry of Commerce and Industry's project and GIZ would support in implementing activities that are decided by the Logistics Division. He also shared his experience from his visit to Dadri ICT where these initiatives could help in making the last mile greener.

3. Sachin, Chetak Group

Thanked the Government for giving an opportunity to industry to give suggestions and recommendations. He said that OEMs, technology providers, and operators should come together to provide charging stations and create a proof of concept and eco-system. Also, hygienic rest rooms and eating spaces need to be provided to the truck drivers.



The meeting concluded with a Vote of thanks from the Joint Secretary, Anant Swarup, and Roland Haas who thanked the participants (Annexure E), especially the Special Secretary, for their attendance and engagement. Mr Swarup went on to remind the audience of the next steps and to invite them to come forward with ideas for future development.



ANNEXURE A

Agenda of the kick-off workshop of Climate Friendly Freight Transport in India (Green Freight) project


Time and Date: 10:00 – 14:00, 19 February 2020

Venue: Silver Oak Hall, India Habitat Centre, New Delhi

TIME	SESSION
09:30 – 10:00	Registration
10:00 – 10:10	Introduction session
10:00 – 10:20	Welcome address by Joint Secretary, Logistics Division, MoCI - Background of Indo-German collaboration for “Climate Friendly Freight Transport in India” project
10:20 – 10:40	Welcome address by Special Secretary, Logistics Division, MoCI - A brief overview on the activities taken up under the Logistics Division, MoCI and setting the context for the kick-off workshop
10:40 – 11:00	Introduction to Green Freight project - Mr Gordon Telling to present on <ul style="list-style-type: none"> • greening freight, win-win examples for businesses and environment • project introduction, outline, objectives and expected outcomes
11:00 – 11:30	Tea/coffee break
11:30 – 13:00	Moderated discussions <ul style="list-style-type: none"> - issues and challenges in logistics sector in India - selection of pilot project corridor - identification of demonstration measures for piloting in India
13:00 – 13:15	Wrap up, way forward, and vote of thanks - Mr Anant Swarup, Joint Secretary, Logistics Division, MoCI and - Mr Roland Haas, Senior Transport Advisor, GIZ
13:15 – 14:00	Lunch
	End of workshop

ANNEXURE B

SHORT PRESENTATION ON GREEN FREIGHT PROJECT AND PRINCIPLE OF GREEN FREIGHT BY MR GORDON TELLING



Climate Friendly Freight Transport in India
or
Green Freight – what is it and why it matters

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Gordon Telling & Kasinath Anbu
Technical Experts – GIZ India
19 February 2020



Introducing GIZ

- Working with partners in India for 60 years
- Global organisation supporting Federal German Government

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Freight logistics
₹ vs time

but

- CO₂
- CO/ NO_x/ SO_x/ O₃/ PM10/ PM2.5 – significant Public Health issues
- Noise
- congestion

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Freight logistics
Green Freight

₹ vs time vs environment
“win/ win/ win”

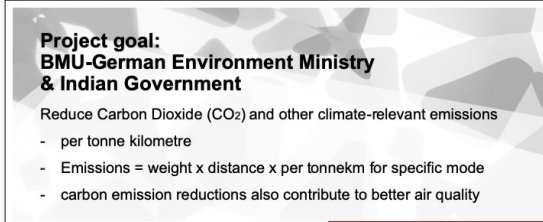
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International commitment - Indian NDCs from Paris Agreement

33-35% reduction in GHG (i.e. Carbon Dioxide) from 2005 until 2030

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Project goal:
BMU-German Environment Ministry & Indian Government

Reduce Carbon Dioxide (CO₂) and other climate-relevant emissions

- per tonne kilometre
- Emissions = weight x distance x per tonnekm for specific mode
- carbon emission reductions also contribute to better air quality

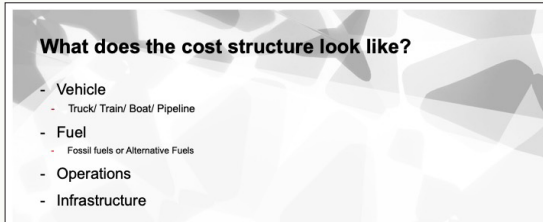
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Other logistics impacts

Inventory costs
Agricultural losses
Road deaths
Oil imports \$100Bn (85%) (plus CNG)

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What does the cost structure look like?

- Vehicle
 - Truck/ Train/ Boat/ Pipeline
- Fuel
 - Fossil fuels or Alternative Fuels
- Operations
- Infrastructure

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Smart Freight Centre Matrix

Sharing International Good Practice

	Operating Efficiency	Technologies	Demand Management
Transport System	Consolidation Centres	Traffic Information Systems	Railway Infrastructure
Freight movement	Load Management Eco-Driving	Telematics	Timing of Deliveries
Vehicles and Vessels	Maintenance	Tyres	Alternative Modes

Vehicle

- Bharat VI standard
- Scrappage
- Incentives
- Retrofit
- Aerodynamics
- Tyres

Operations

- Fleet management – reducing empty running, optimising routing
- Logistics planning/ Career development
- Infrastructure planning
- Driver training

Project components

Emission reduction measures and monitoring	<ul style="list-style-type: none"> • Develop toolkit to measure GHG and other emissions • Identify key measures for reducing GHG emissions
Strategic and Institutional Framework	<ul style="list-style-type: none"> • Recommendations (low-hanging fruits/quick win projects) for "climate friendly and efficient" freight transport e.g. Logistics Policy, National Logistics Plan • National level committee • Facilitate dialogue between various stakeholders
Measures on a <u>PilQI</u> corridor	<ul style="list-style-type: none"> • Measures (technological and managerial) to increase efficiency of freight management • Facilitate mechanism to have multi-stakeholder coordination at corridor level
Capacity Building	<ul style="list-style-type: none"> • Develop and impart targeted training programs • Partner with key institutions working in the freight sector for effective penetration and knowledge dissemination

Way forward

- Baseline study on Delhi-Mumbai corridor – identifying bottlenecks, legal frameworks, barriers etc
- Establish Project Steering & Implementation Structures
- Immediate support on logistics policy/action plan
- Development of Carbon measurement methodology
- Study Tour
- Multi-stakeholder national/ international conference



धन्यवाद



ANNEXURE C

MEASURES TO PROMOTE GREEN FREIGHT

Table 1. Identified technologies and strategies for logistics optimization and mode shift to promote green freight

Technology	Logistics Optimization	Mode Shift
A) Aerodynamics 10% reduction in drag AFT box taper Boat tail Box skirts Streamlining Full skirts Roof deflector Cab-box gap fairings Full gap fairings B) Light Weighting Material substitution C) Tires and Wheels Automatic tire inflation on tractor/vehicle Automatic tire inflation on trailer Low resistance tires Low resistance wide base tires D) Transmission-Driveline Aggressive shift logic and early lockup Increased transmission gears Transmission friction reduction E) Engine efficiency Improved diesel engine F) Hybridization Dual-mode hybrid Parallel hybrid Parallel hydraulic hybrid Series hybrid G) Management Predictive cruise control Training and feedback Route management	Improved city logistics Route planning / optimization Traffic management system Vehicle size Freight consolidation Network optimization Package reduction Drop and hook Backloading Logistics information platform Freight company consortium Load optimization	A) Technology 1) Rolling stock, adjustment of rail cars to market needs 2) Propulsion, energy recycling 3) Modern train control system 4) Longer trains, double deck container trains B) Infrastructure 1) Removal of bottlenecks 2) Dedicated freight tracks on heavily used relationships 3) Electrification 4) Transshipment technology C) Logistic Concepts 1) Networks of multi-modal freight centers 2) Synchronized service, e.g. line-based concepts 3) Block trains, pallet flow systems 4) Concentration on railway affine market segments D) Public regulation and pricing policy 1) Taxation systems 2) Internalization of external costs E) Removal of physical and organizational barriers F) Information systems /structures G) Modernization of ports H) Port coopetition I) Develop shipping networks J) Port ICT K) Logistics concepts and shipping lines design

Note: The ideas listed are a result of the workshop participants' informal brainstorming exercise and do not reflect any commitment on the part of the government or ADB/GIZ.

ANNEXURE D

CHALLENGES AND SOLUTIONS FOR GREEN FREIGHT IN WORKSHOP

Table 1: Index of challenges faced by DMCs that could be resolved with green freight strategies

Major Challenges Matrix	Infrastructure - Roads	Intermodal & Other Infrastructure	Old Trucks	Technology	Poor Enforcement, I&M	IT	Capacity	Data	Fragmented Industry	Overloading	Institutional	Access to Finance	High Cost	Awareness	Urban Freight	Partnerships
Bangladesh		✓	✓		✓					✓				✓		
Bhutan	✓				✓	✓										
Cambodia	✓						✓									
India		✓	✓			✓									✓	
Indonesia	✓					✓	✓	✓		✓						✓
Lao PDR					✓	✓			✓							
Maldives		✓														
Myanmar				✓			✓	✓						✓		
Nepal	✓	✓		✓			✓	✓				✓		✓		
Philippines	✓	✓		✓										✓		
Sri Lanka														✓		
Thailand														✓		✓
Viet Nam			✓	✓					✓	✓		✓	✓	✓		
Central & West Asia (including PRC)	✓	✓		✓	✓	✓			✓		✓					

Note: The ideas listed are a result of the workshop participants' informal brainstorming exercise and do not reflect any commitment on the part of the government or ADB/GIZ.

ANNEXURE E

LIST OF WORKSHOP PARTICIPANTS

NAME	DESIGNATION	ORGANISATION
Mr N. Sivasailam	Special Secretary	Logistics Division, Ministry of Commerce & Industry (MoCI)
Mr Anant Swarup	Joint Secretary	Logistics Division, Ministry of Commerce & Industry (MoCI)
Mr SK Ahirwar	Director	Logistics Division, Ministry of Commerce & Industry (MoCI)
Mr Jayaseelan	Director	Ministry of Shipping
Mr AK Shrivastava	Under Secretary	Logistics Division, Ministry of Commerce & Industry (MoCI)
Mr Ankit Kaneri	Logistics Executive	Logistics Division, Ministry of Commerce & Industry (MoCI)
Mr RK Sinha		Logistics Division, Ministry of Commerce & Industry (MoCI)
Mr R. Vaidyanathan	Section Officer	Logistics Division, Ministry of Commerce & Industry (MoCI)
Mr Surajit Sarkar	COO	DMICDC Logistics Data Services Ltd. (DLDSL)
Mr Rajiv KR Khanna	Director (PCRT)	Petroleum Conservation Research Association
Mr Gyan Prakash	Additional Director	Petroleum Conservation Research Association
Mr Prashant Rawat	Deputy Director	Petroleum Conservation Research Association
Mr Sachin Haritosh	Director	Chetak Logistics
Mr Pradeep Singal	Chairman	All India Transporter's Welfare Association (AITWA)
Mr Jai Prakash Singla	CEO	All India Transporter's Welfare Association (AITWA)
Mr Arvind Kumar	Advisor	The Energy and Resources Institute (TERI)
Mr Sushil Kumar	Sr. Advisor	Society of Indian Automobile Manufacturers (SIAM)
Mr Ernst Doering	Director, SUID	German International Cooperation (GIZ)
Mr Roland Haas	Senior Transport Advisor	German International Cooperation (GIZ)
Mr Gordon Telling	Technical Expert	German International Cooperation (GIZ)
Mr Kasinath Anbu	Technical Expert	German International Cooperation (GIZ)
Mr Narendra Verma	Jr. Technical Expert	German International Cooperation (GIZ)
Ms Shipra Pandey	Jr. Admin Officer	German International Cooperation (GIZ)