





PIARC Technical Committee 2.3: Sustainable Freight Paris, France, 7-9 February 2024

Executive Summary

The kick-off meetings for the 2024-2027 cycle for all Technical Committees of the World Road Association (PIARC) were held in Paris, France in January and February 2024.

Austroads is represented in the Technical Committee (TC) 2.3: Sustainable Freight by David Shepherd (New Zealand Transport Agency Waka Kotahi) who is the full member, with both Dr Torill Pape (A/Deputy Chief Engineer – Structures, Department of Transport and Main Roads) and Ian Mond (DOTP VIC) as corresponding members.

Technical Committee 2.3 Sustainable Freight is made up of 57 Experts from 29 Countries.

In this cycle, Sustainable Freight will be addressing two issues:

- 2.3.1 Efficient and safe road infrastructure and operation of Road Transport
- 2.3.2 Greening of road freight (decarbonization / energy efficiency)

David Shepherd was appointed the work programme lead for TC2.3.1 Efficient and Safe Road Infrastructure and Operation of Road Transport.

Meeting Purpose – Terms of Reference and associated activities

The PIARC Strategic Plan 2024–2027 was drafted by the Strategic Planning Commission and the Strategic Planning Working Group. It was approved by the PIARC Council in September 2023. During 2023, the Chair and Secretaries of Technical Committee 2.3 worked with the PIARC General Secretariat and Theme Coordinator to develop and refine the committee's Terms of Reference contained within the Strategic Plan. The Terms of Reference define the work program for the committee over the 2024-2027 work cycle.

The main activities of the kick-off meeting were to:

- Participate in a plenary session led by Patrick Mallejacq (PIARC Secretary General) and Nazir Alli (PIARC President).
- Provide presentations on the activities and production of past PIARC work cycles.
- Discuss the objectives, outputs, work methods, and organization of the Work Programme as dictated by the 2024-2027 Strategic Plan.
- Establish Working Groups and assign individual members to Working Groups for each of the issues listed above.
- Finalise Technical Committee organisation (establish working groups, appointments, meeting schedule, seminar planning)
- Commence initial work group scoping
- Appoint webmaster and all contact positions.

Sustainable Freight Work Program

In the context of climate change, high energy prices, disruptions in global supply chains, digital transformation, scarcity of workforce and raw resources as well as ageing infrastructure, TC 2.3 will focus on the key factors that will enable an efficient and sustainable road freight transport, as well as its role in cultivating an efficient and sustainable logistics system.

Theme 2.3.1 is focussed on efficiency and effectiveness, freight value to society, and freight resilience, with theme 2.3.2 focussed on freight decarbonisation.

Special attention will be paid to the contribution of women to transport as well as the impact of freight transport on road safety.

The work program will produce content in line with the following schedule:

| Deliverable | Туре | Target audience | Delivery date | Remark |
|-----------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------|
| 2.3.1. Efficient and safe road infrastructure and operation for freight transport | | | | |
| Preliminary research | | Internal for TC | Dec 2024 | Investigation in the value of freight |
| Good practices for efficient road freight | Collection of cases studies | Decision makers and experts: • Road administrations | Sept 2025 | good practice collection of various topics |
| Title to be defined | High Impact Summary | Road infrastructure operators | June 2027 | Short report of about 20 to 30 pages with link to good practice collection |
| | Seminar | Logistics and transport companies and freight transport | Sept 2025 | Main focus on WIM / overload detection |
| Article | Routes and Roads Magazine | associationsEnforcement agencies | 1 st semester 2024 | Tanzania seminar |
| | Webinar | | | Together with partner organisation |
| 2.3.2 Greening of road freight | | | | |
| Good practices on greening road freight (I) | Collection of cases studies | Decision makers and experts: • Road administrations | April 2025 | Good practice collection of various topics 2 issues are planned |
| Title to be defined | High Impact Summary | Environmental administrations | September 2026 | |
| PIARC Seminar on greening road freight in LMIC | Seminar | Road transport operators Logistics and | | Africa / Asia / South America |
| Good practices on greening road freight (II) | | transport companies and freight transport | March 2027 | |
| Article on greening road freight transport | Route and Roads Magazine | | | Highlighting good practice collection, seminar and high impact summary |
| | Webinar | | | Together with partner organisation |

Table 1.1 TC2.3 Delivery Schedule

A number of case studies within 2.3.1 Efficient and safe road infrastructure and operation of Road Transport are being looked into, topics such as:

Freight value to society

Freight Value:

- Cost and benefits of freight (where inefficiencies are, gains, ...) including environmental externalities
- Impact of heavy commercial vehicles on road safety
- Diversity within Freight: Trucking workforce/gender imbalance

Freight Efficiency and Effectiveness

Freight Level of Service requirements:

- Expected freight level of service and design rules for the various kinds of roads
- Optimised phasing to upgrade of existing infrastructure to allow heavier vehicles (funding, advocacy, planning...)

Compliance of heavy vehicles with road infrastructure and regulation:

• Direct and smart enforcement (weights and dimensions, vehicles, driving time, etc.) – cost effectiveness in LMIC.

Freight Permitting:

- Improvement and operation of the permit system for overweight / oversize vehicles
- Intelligent Access for heavy commercial vehicles

Freight facilities along roads:

- truck parking: special focus on specific needs (women, but eventually young or elderly drivers), and on new organization patterns requirements (relay transportation, EV charging...) with impact of new technologies
- technical and working rules enforcement (with non-discrimination issues)
- technical requirements (noise / space / light...)

Use of road space for freight:

- dynamic use of road space,
- multimodal / intermodal corridors
- Dedicated freight transport networks (truck lanes, dedicated infrastructure...),

Freight Hubs:

- spatial planning and land use issues related to road freight facilities
- road connectivity to multimodal/intermodal hubs

Freight logistics and urban interface (in coordination with TC 2.1), scope to de defined

Emerging Technologies within Freight:

- application of emerging technologies, with a focus on their adaptation to men and women
- investigating use of new technologies for new logistics systems, and potential for other services (ERS, energy production...)

Freight Resilience

• resiliency of road freight in regards with all the previous items, to prepare for the Chambery Congress

Freight Decarbonisation Theme 2.3.2 Greening of road freight (decarbonization / energy efficiency) are:

- Energy efficiency
- Strategies to optimize freight transport (high capacity transport...)
- Working on demand for road transport (deliveries / distribution patterns...)
- Requirements for road freight and multimodal facilities and roads when using trucks with alternative drives (zero or low emission: electric, hydrogen, new logistics system, ...), how freight expectations or organization could help (fleet management / relay organization with charging requirements...)

As well as solutions from the field of logistics to solve the existing challenges in the area of road freight transport.

- Finding robust and energy efficient solutions
- Finding simple and cost-efficient solutions, with a special focus for LMIC
- Finding social adequate solutions
- Assessing specific road freight transport emissions to build a net zero society (reduction of CO2 emissions, full supply chain approach...)
- Factors to reduce them (impact on communities / social impact liveability / local distribution and sourcing)
- Investigate on how women support greening of road freight, taking care of safety and the environment.
- The contributions of women in many LMICs to transport are critical to the overall well-being of their livelihoods and economic conditions. Safety is a major concern for women in LMICs. Conducting outreach through surveys or listening sessions would contribute greatly to our TC's understanding of their transport needs and help to identify solutions of the greatest benefits. Putting forward such innovations could be an objective for the TC.

Learnings for Australia and/or New Zealand:

There is a strong interest from participants in holding a TC 2.3 session in New Zealand and/or Australia. The earliest this would occur would be in 2025. There is potential to align both the Austroads Freight taskforce and other PIARC technical committees to make the most to the opportunity.

Next steps

Plans have been made for regular meeting cadence being:

- Workgroup meetings virtual meetings fortnightly to start, monthly likely thereafter.
- Technical Committee In-Person every 6 months, locations to be finalised (awaiting signoff by host countries).

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