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The Revision Committee to the Model Rules of the Permanent Identification of Railway Rolling Stock

Summary of discussions during the workshop on the role of public-private partnerships in the financing of investment in railways

Note by the secretariat

I. Introduction and opening remarks

1. The workshop on the role of public-private partnerships (PPPs) in the financing of investment in railways took place with a focused agenda on how PPPs can contribute to the development and modernization of railway infrastructure and rolling stock. The session began with welcoming remarks from the Chair and the Secretariat, who emphasized the growing importance of PPPs in financing railway projects. They pointed out that while historically, the public sector has been the primary financier of railways, the involvement of the private sector has become increasingly crucial, especially in light of the significant investments required for new builds, maintenance, and renewal of both infrastructure and rolling stock.

II. Role and benefits of PPPs in railway financing

2. The workshop started with discussions on the role of PPPs in the railway sector. The representative from the Rail Working Group and the Intergovernmental Organisation for International Carriage by Rail (OTIF) highlighted the context of the Luxembourg Rail Protocol and the work done earlier in the session to discuss model rules, noting that PPPs are integral to making railway financing more accessible and cost-effective.

3. PPPs are typically long-term contracts between private entities and governments, characterized by risk-sharing between the public and private sectors, with the private sector contributing both financing and management to the project. In the railway sector, PPPs have been increasingly adopted since the 1990s, particularly for infrastructure projects. Although their use in railways is still lower compared to sectors like energy and roads, PPPs are gaining

prominence due to growing needs for investment driven by increasing populations, mobility demands, and the necessity for environmentally sustainable transportation solutions.

4. PPPs offer several advantages. They reduce the financial burden on governments by leveraging private sector investment, increase operational efficiency, and introduce innovative technologies and solutions. By leveraging private expertise, PPPs also often lead to better project quality and service delivery. Additionally, PPPs can be supported by multilateral development banks and export credit agencies, making them more viable for large-scale railway projects.

5. One key question discussed was whether PPPs are primarily about financing rolling stock or entire rail projects. This distinction was considered crucial, as the scope of the PPP (rolling stock versus infrastructure) significantly impacts its financing and operational structure. The discussion also touches on the differences between freight and passenger traffic, with freight often requiring different financing models, such as dedicated freight corridors.

III. Risk-sharing in PPPs

6. The workshop explored the benefits of PPPs in managing project risks. The workshop agreed that PPPs distribute risks more effectively, with each party managing the risks they are best equipped to handle. Traditional procurement methods place significant responsibilities on the public sector, especially in design and safety compliance. This often results in delayed project delivery, cost overruns, and numerous claims due to incomplete or incorrect designs. Although contractual penalties are intended to mitigate these risks, they can fall short when private contractors account for these penalties in their pricing. PPPs, by contrast, transfer key risks, such as design, construction, and approval, to the private sector, creating strong incentives to meet performance and delivery targets, as the financial returns depend on these factors. This eventually leads to enhanced reliability, utilization of assets, and a focus on long-term efficiency.

IV. Financing rolling stock for open access markets

7. The role of PPP in addressing the challenges faced by private passenger rail companies, particularly in accessing rolling stock for long-distance services, was also discussed. The representative of ALLRAIL explained a major challenge faced by its members is the difficulty in accessing long-distance rolling stock, particularly in the open-access market given their high costs. Manufacturers often prefer larger orders from state incumbents, leaving independent operators at a disadvantage. Furthermore, state-owned rail incumbents benefit from public service obligations (PSOs) and implicit state guarantees, which give them more favourable financing terms compared to private operators. However, relying solely on PSOs for long-distance routes across Europe would increase costs for taxpayers. The representative argued that many routes could be commercially viable without subsidies if conditions were right, and noted that European Union regulations (specifically Article 2E of EC1370/2007) stipulate that if a service can be operated commercially, it should be operated without relying on public funds.

V. Management of PPPs

8. Various PPP models were also discussed, namely the consortium (horizontal) approach and the vertical approach. Under the horizontal consortium model, multiple private entities (e.g., builders, operators, financiers) form a partnership to share resources and risks. This approach helps spread risks within the consortium, but it can also introduce political

risks and cost increases, particularly when the government holds a stake in the consortium. Political instability or changes in project specifications can lead to costly delays and adjustments. A vertical approach on the other hand is where the government assumes the initial financial and construction risks, and later transfers operational responsibilities to private entities. This model is seen as more efficient in certain cases, as it allows governments to reduce risk before the project enters its operational phase. Development banks are often involved in supporting this approach by providing financial backing during the early stages of the project.

9. Another crucial aspect of PPPs in the railway sector is the financial viability of the operations, which in many cases depends on subsidies from public authorities. Without these subsidies, many railway systems would struggle to remain financially viable. PPPs must consider the role of subsidies early in the planning process to avoid disruptions later in the project's life cycle. The need for financial support makes it critical to integrate subsidy conditions into the contractual framework.

10. The workshop concluded that there is no “one-size-fits-all” model in PPPs, and each PPP must be carefully structured to balance risks between public and private sectors effectively, although a common framework could benefit future projects in expediting the contracting process.

VI. Challenges of PPPs

11. Challenges of PPPs were discussed. One common challenge that were repeatedly discussed was the contracts tend to be complex, requiring skilled management, technical expertise, and legal resources. This is particularly the case for large-scale projects that span multiple jurisdictions or involves cross-border operations. The selection process for private partners in PPP is often lengthy compared to traditional procurement. Besides, PPPs often involve long-term commitments, which can be difficult to manage, particularly when economic or political conditions change over the course of the contract. Managing multiple stakeholders, ranging from rolling stock manufacturers to financial institutions, further adds to the complexity.

12. Another challenge is the non-alignment of interests between the private and public sectors. Participants discussed the financial dynamics between the public and private sectors in PPPs, and whether private sector involvement in rolling stock procurement, maintenance, and operation truly benefits the public sector. While private involvement is often seen as beneficial, it is essential to ensure that both parties share an equitable interest in the outcomes. In some cases, there is a limited number of bidders for a PPP, often because the objectives of public and private entities are not aligned. The private sector prioritizes bankable projects, meaning they will not engage if the project does not present a viable financial opportunity. Additionally, the private sector demands a fair and transparent selection process to ensure they have a genuine chance of securing the contract. This lengthy process helps guarantee that the partnership is based on mutual benefit. On the other hand, the public sector often seeks effective resource management and quality service delivery, and these are not necessarily compatible with the private sector’s interests. The challenge thus lies in balancing these different objectives and ensuring both sides benefit from the collaboration.

VII. The role of the Luxembourg Rail Protocol in PPPs

13. The Luxembourg Rail Protocol, which entered into force in March 2024, is designed to support the financing of railway rolling stock PPPs by attracting more and cheaper private sector funding. It establishes an internationally recognized legal framework that reduces risks for creditors, thereby enabling lower borrowing costs for projects. The Protocol includes an

international registry that tracks security interests in rolling stock, making it easier to manage cross-border transactions and enforce creditor rights. A permanent, unique identifier for rolling stock known as URVIS identifier is central to this registry. This identifier enhances certainty and transparency when registering interests or searching in the registry.

14. The workshop also discussed the importance of national agencies in pushing for the Protocol's full implementation. They noted that the initial economic effects of the Protocol are significant. The discussion also emphasized the importance of securing creditor interests through declarations made by member States. Over time, as the Protocol evolves, elements such as improved ratings and securities in capital markets would encourage a more robust rolling stock leasing market. Participants thus recognized the opportunity to replicate aspects of the aircraft protocol into the Luxembourg Rail Protocol, with due consideration to the unique environmental and economic needs of the railway sector.

VIII. Digitalization and innovative solutions in PPPs

15. The workshop discussed the benefits of PPPs in digitalization and bringing innovative solutions to the railway sector. The private sector often brings in up-to-date technologies, something the public sector may struggle with in traditional models. The partnership framework encourages technological innovation, helping projects stay aligned with the latest advancements. However, manufacturers are sometimes reluctant to take on financial risk, preferring to collaborate with banks. Furthermore, with the rolling stock market dominated by a small number of manufacturers, unrealistic delivery schedules can hinder project success. Hence, early engagement with manufactures, through precompetitive dialogue, is essential to ensure realistic tendering processes.

16. The growing importance of digitization in the railway sector was also a key theme in the intervention. Innovations such as embedding sensors in wagons are increasingly critical for providing real-time information on freight movement and transport logistics. This shift toward digital solutions needs to be accounted for in the early stages of PPP financing and investment, as digital tools will play a pivotal role in modernizing railway operations and enhancing efficiency.

17. The workshop also discussed the importance of identifying the location of wagons in the railway sector, particularly with regard to the use of sensors. A key question raised was how precise the location tracking of wagons needs to be — whether it's sufficient to know the general network location or if more precise tracking, such as within one metre, is necessary. Two main issues emerged under this topic: the first is locating the wagon itself, which is increasingly feasible through global navigation satellite system (GNSS) and global system for mobile communication (GSM) systems. The second is the need to identify the contents within the wagons. Customers and stakeholders, especially those dealing with multiple containers or sensitive goods, often want assurance that the same containers remain with the wagon throughout transit and that there are no changes or issues (such as damage or loss) affecting the contents. This is becoming a growing market requirement, and there is an increasing demand for specific sensors to monitor the state of goods, particularly for high-risk or perishable items.

18. However, not all wagons are currently equipped with such advanced sensors. Insurers and customers may soon require more detailed information, including the use of sensors for tracking both the location and condition of the contents inside wagons. As technology and market demands evolve, it is anticipated that there will be greater investment in these visibility tools, improving both the tracking of wagons and their contents.

IX. PPPs and the SDGs

19. A representative from UNECE presented the organization's efforts to support the development of infrastructure through PPPs with a focus on achieving the UN Sustainable Development Goals (SDGs). He explained that the UNECE has developed various instruments to help governments, the private sector, and civil society understand and implement PPPs effectively, using a framework based on the SDGs, particularly SDG 9 (industry, innovation, and infrastructure) and SDG 17 (partnerships for the goals). He pointed out the significant gap in infrastructure financing, particularly in regions like Africa, where an estimated $100 billion is needed annually to bridge the infrastructure gap and meet the SDGs by 2030.

20. UNECE has created various standards, recommendations, guidelines, and IT tools to assess infrastructure projects beyond traditional value-for-money evaluations, focusing on "value for people" and "value for the planet". This shift reflects a more holistic approach, assessing projects in terms of access and equity, economic effectiveness, resilience, stakeholder engagement, and replicability. It was emphasized that these standards and tools are designed to help both public and private sectors assess the impact of infrastructure projects on sustainability goals. The key tool UNECE has developed is PIERS (PPP and Infrastructure Evaluation and Rating System: https://piers.unece.org/), a methodology that assesses infrastructure projects across five key outcomes, using 22 criteria and 95 indicators derived from the SDGs. This tool allows stakeholders to evaluate projects not only on financial performance but also on their contributions to people and the planet. PIERS has been applied to over 200 projects globally, with case studies from various countries. The tool is flexible, providing assessments tailored to different development contexts and project stages. PIERS is being used in several countries for post-disaster recovery assessments, such as in Ukraine and Turkey, and by institutions like the Asian Infrastructure Investment Bank and the Inter-American Development Bank. Though the SDGs are targeted for 2030, UNECE is already preparing for the post-2030 period, with plans to adapt the tool to future UN frameworks.

X. Second-hand markets and asset liquidation

21. PPPs provide a mechanism for asset liquidation in the case of project failure, making them more attractive to investors by reducing financial risk. Establishing a proper regulatory framework and ensuring standards for asset liquidation are essential to making PPPs viable and effective in delivering rolling stock projects on time and within budget.

22. The discussion following the presentation centred on the emerging secondary market for rolling stock, particularly in relation to the Luxembourg Rail Protocol and the push towards standardization in the industry. Participants also considered the potential for a functioning second-hand market and whether the Luxembourg Rail Protocol would support this. It was noted that recent projects are increasingly addressing the potential liquidation of assets in case of project failure, highlighting that this is becoming a more prominent consideration for investors and operators. While this is already common in the freight sector, especially for wagons, the trend is also emerging in the passenger sector, particularly in Europe. There is optimism that with connected systems and common standards, this could also extend to other parts of the world.

23. However, the meeting noted that there is a tendency to customise rolling stock. This customization complicates the assessment of residual values at the end of financing terms, making it harder to create a secondary market. The Luxembourg Rail Protocol could help by clarifying the cost differences between leasing standardized versus customized equipment, encouraging operators to move toward standardized products. This shift would facilitate asset

mobility, open access, and ultimately support the development of a robust secondary market. Standardization also offers manufacturing benefits, as economies of scale would make production more cost-effective.

24. The Review Committee thanked the speakers for their interventions and noted the importance of PPPs in ensuring appropriate investment in railways.