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Working Party on Transport Trends and Economics

Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport

Twenty-sixth session
Geneva, 7 and 8 March 2024

Report of the Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport at its twenty-sixth session

Contents

I. Attendance

1. The Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport (hereafter called GE.3) held its twenty sixth session (eighth session under its new mandate) on 7 and 8 March 2024. The session was co-chaired by Ms. S. Haensel (Germany) and Ms. T Popescu (France). It was held in-person at the Palais des Nations in Geneva.

2. Representatives of the following United Nations Economic Commission for Europe (ECE) member States participated: Denmark, France, Germany, Poland and Portugal.

3. Representation of the following international organizations participated: Trans-European Railway (TER) Project, United Nations Economic Commission for Western Asia (ESCWA), United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and United Nations Conference on Trade and Development (UNCTAD).

4. The following non-governmental organization was represented: International Union of Railways (UIC).

5. At the invitation of the secretariat, experts from the following organizations participated: Albanian Railways, Climate Sense, Global Alliance of Universities on Climate (National University of Ireland), Oxford Institute for Energy Studies, University of the Aegean, and ProRail.

II. Adoption of the agenda (agenda item 1)

6. GE.3 adopted its agenda as contained in ECE/TRANS/WP.5/GE.3/51.

Documentation

ECE/TRANS/WP.5/GE.3/51

III. Initiatives in climate change impact assessment and adaptation for inland transport (agenda item 2)

7. GE.3 continued its discussion on initiatives in climate change impact assessment and adaptation for inland transport with a view to understand if any approaches, tools and/or methodologies are being developed that could be integrated by GE.3 in its work. In this context, (a) UIC updated GE.3 on its project Resilient Railways facing Climate Change: Heavy Rains (ReRa-Rain) and High Temperatures (ReRa-Temp), (b) Oxford Institute for Energy Studies spoke about interdependencies between energy and transport in the context of adaptation, and (c) Global Alliance of Universities on Climate informed about the Alliance work to foster synergies among research, policy and industry for resilient transport in urban spaces. UNCTAD reported on its activities of interest to GE.3.

8. University of Aegean offered a brief update on the state of knowledge on the evolution of the potential hazards for inland transport under climate variability and change and discussed in more detail marine heatwave.

9. GE.3 thanked for the information and updates provided by UIC and UNCTAD and for the insights shared by Oxford Institute for Energy Studies and Global Alliance of Universities on Climate. In the discussion, GE.3 noted that big data should be researched further for its use in better assessing indirect costs from impacts of climate change on transport. It also reiterated the need of linking climate change adaptation to mitigation action. It noted the fact that transport energy supply may be more resilient in the future due to ongoing transformation in the energy sector. GE.3 requested then further progress updates from UIC on ReRa projects so that GE.3 could consider these findings when preparing its outputs. Finally, GE.3 requested UNCTAD to share through the secretariat detailed information on the Barbados Global Supply Forum at which the topic of climate change resilience would also be addressed.

10. GE.3 noted that, due to in-person format only of the current session, some of the presentations planned for the current session could not be delivered. GE.3 requested the secretariat to arrange the presentations on ways to incorporate biological changes in the adaptation work, experience and practices in applying nature-based solutions in adaptation of transport to climate change, and on some more insight on application of Global Warming Levels for regional climate change impact assessment at the next session.

11. GE.3 discussed then briefly on its final report on the execution of the mandate. It agreed to include marine heatwave in the section on climate variability and change of the report. It requested the lead authors for the agreed chapters of the report to prepare their initial drafts for the next session. GE.3 asked the secretariat to work with the lead authors in this regard.

12. GE.3 also asked its Chairs and the secretariat to propose a simple review form which could be used for providing written comments on the final report chapters. This form should be presented at the next session.

13. GE.3 considered then the template for case studies for inclusion in the final report as prepared by Denmark and available in Informal document (March 2024) No.1. GE.3 thanked Denmark for developing the template. It suggested the following changes:

(a) add to the box on project description also request for information on the objective and justification for the project;

(b) differentiate in the box on infrastructure assets between assets and transport services/operation; in this box also add light railway and subway as assets;

(c) add in the box on weather related hazards also hazards such as heatwave and permafrost and provide sufficient space for information on describing methods used for assessing weather related hazards; and

(d) add a request for sharing visuals and images in the case studies.

14. GE.3 requested that the updated template is circulated for any possible written comments by interested experts with a deadline of mid-April, after which period the final version of the template should be widely shared by the secretariat with an invitation to develop case studies based on the template. Such should be provided by interested stakeholders for review by GE.3 at the next but also subsequent sessions.

15. Finally, under this item, the secretariat invited experts to commence internal consultation on options for continuation of the work on adaptation of transport to climate change upon expiry of the GE.3 2020–2025 mandate. In this context, the secretariat informed GE.3 about the adoption by the Inland Transport Committee (ITC) of its Strategy on reducing GHG emissions from inland transport with the time horizon until 2050, as well as referencing transport adaptation work in the Strategy. Therefore, experts especially those representing governments in GE.3 work might wish to consult within their governments if the group of experts which has a temporary status should be transformed into a more permanent technical group. The discussion on this aspect should be undertaken at the remaining sessions and result in formulation of a relevant recommendation by GE.3.

IV. Climate change and transport assets data (agenda item 3)

16. Further to the discussion on the thresholds of precipitation projection index and the request to prepare additional precipitation projections at the last session, ESCWA presented projections maps for the following indices for RCPs 2.6 and 8.5:

- Annual number of days with precipitation exceeding 30mm (P>30mm) for Europe,
- Seasonal results for precipitation exceeding 50mm over 3-days for Europe,
- Annual 1-day maximum precipitation, and
- Annual simple precipitation intensity index.

17. GE.3 thanked ESCWA for preparing the additional maps. It analysed them and agreed to present and describe in its final report maps with annual count of days with P>30mm in addition to P>50mm over 3-days agreed on at the previous session, as well as seasonal P>50mm over 3-days and the annual simple precipitation index. The same sets of projections maps should be presented for Europe and Central Asia.

18. GE.3 requested then the secretariat to contact experts from Canada and the United States and invite them to share for the final report projection maps for the same indices and thresholds, if available. In this way, for the first time, the final report could present projection maps covering the entire area of the region of the Economic Commission for Europe.

19. Regarding projections for windstorms, GE.3 agreed to reflect further in this regard and when doing so to take into account the work done in Germany for the coastal areas based on regional coupled ocean-atmosphere models. To this end, Germany was requested to make a presentation at the next meeting.

20. GE.3 also discussed threshold levels used in various countries in assessment of impacts. While useful information was shared in this regard, it was concluded that the earlier selected threshold values appear appropriate for the type of analysis undertaken by GE.3.

21. The secretariat reported then on consultations held since the previous session on a possible resilience benchmarking tool and organisation of a workshop to discuss a need for the tool. The consultations showed that asset benchmarking would require data adjusting for comparison, however, the latter was found too complex if not impossible thus making any resilience benchmarking difficult to attract much attention. On the positive side, the consultations revealed a need for common data structure on the damages/costs caused by climate change impacts to transport and linking them with key performance indicators (KPIs) used in transport sectors.

22. GE.3 discussed the outcomes of the secretariat intersessional consultations and found it sensible to explore the damages/costs data structure and KPIs link further. To this end, it requested the secretariat to organise a call for interested experts to explore this subject further and, when viable, to make proposals for consideration at the next session.

V. National and sub-national projects on climate change impact assessment and transport asset adaptation needs (agenda item 4)

23. Denmark discussed in a presentation a GIS rainfall risk mapping tool for the country's railway network with focus on the application of sensors along the major railway lines. France provided insight into its new project to assess vulnerability of the national road network to climate change.

24. GE.3 appreciated the informative presentations and the valuable discussion on risk mapping and on a buy-in for vulnerability assessment at a national scale. GE.3 invited both countries to consider providing case studies on this work for the final report. GE.3 also requested France to share the future outcomes of its work on assessment of inaction costs and on a catalogue of preventive or curative adaptation measures for network components following the vulnerability assessment.

25. Climate Sense informed GE.3 about a position paper under preparation in the United Kingdom of Great Britain and Northern Ireland on multi hazard, cascading events in winter seasons. GE.3 expressed its interest in the paper and requested, if possible, more information about the paper and its conclusions to be shared at the next meeting.

26. France mentioned ongoing work on national adaptation plan and its publishing in summer 2024, on assessment of rolling stock adaptation to heatwaves and resilience of supply chains and aimed to provide more information on this work at the next session.

27. Germany reported briefly on the adoption of national climate adaptation law which establishes a requirement for all Federal states, local authorities and public agencies to carry out vulnerability assessment and to put in place adaptation plans. Germany was also

developing its climate change adaptation strategy to include therein measurable adaptation goals for different sectors, relevant measures to achieve these goals and specific indicators for assessing success in attaining the goals. This effort was expected to be finished before the end of 2024. Germany would aim to provide more information on this work with a specific focus on the transport infrastructure related goals at the next session.

VI. Database on adaptation measures (agenda item 5)

28. The secretariat informed GE.3 on the updates made to ECE/TRANS/WP.5/GE.3/2023/1 and ECE/TRANS/WP.5/GE.3/2023/2 and the issuance of ECE/TRANS/WP.5/GE.3/2023/1/Rev.1 and ECE/TRANS/WP.5/GE.3/2023/2/Rev.2, which contained the latest version of the guidance on adaptation pathways in the transport sector.

29. GE.3 welcomed the final corrections and endorsed the guidance. It thanked again the University of Birmingham as well as all the experts engaged in developing the guidance for their work. GE.3 requested then the secretariat, similar to its earlier request concerning the stress test framework, to explore the possibility to publish the guidance on adaptation pathways in the transport sector separately to its final report.

30. The secretariat reminded GE.3 that the guidance should be supplemented by case studies on the application of adaptation pathway in transport sector, to which end, it reiterated the request to experts to explore interest for case studies.

VII. Guidelines for integrating climate change considerations in planning and operational processes (agenda item 6)

31. The secretariat informed GE.3 that the stress test framework was added to a publication programme for 2024 and that it should be published in the first half of 2024. GE.3 welcomed this information.

32. The TER project manager informed GE.3 about the preparations to the TER workshop, to take place in mid-May 2024, which would include a simulation to stress test a fictive railway line section based on the GE.3 framework for stress test using a qualitative assessment approach. The TER project manager requested interested experts to contact the secretariat in case they would wish to attend the TER workshop and the simulation.

33. GE.3 took note of the information shared by the TER project manager and requested that information be also shared on the outcomes of the simulated stress test at the next session. GE.3 also requested the TER project to prepare a case study, if possible, on the simulated stress test. GE.3 also invited other experts to explore case studies on stress tests.

34. The secretariat presented then on behalf of involved experts the draft guide for assessing transport asset criticality, as contained in Informal document (March 2024) No.2.

35. GE.3 considered the draft guide and requested that data quality aspect is better reflected in step 2 and that it also includes a statement that assessments be repeated when more and better-quality data are available. GE.3 requested experts to provide inputs for chapter 3 on the various methods included for assessing criticality.

36. University of Aegean informed GE.3 about a project carried out in Greece to assess climate risk of 154 Greek ports incorporating port criticality assessment through a multicriteria analysis. The outcomes of the project should be available in time for the next GE.3 session, in which case University of Aegean would present them and provide input on the multicriteria analysis for criticality assessment based on the experience and lessons learned from the project. GE.3 welcomed this information.

37. The secretariat notified GE.3 that no additional data had been collected on impacts of extreme weather events. Experts were encouraged to facilitate additional submissions of filled-out surveys.

38. The secretariat invited then GE.3 to consider ways to offer wide, user-friendly but also interactive rather than just passive access to the resource material that the group would

have produced by the end of its mandate. Following a first exchange of ideas, GE.3 requested the secretariat to explore options for setting up an electronic UN hub for climate change adaptation through which the resource material could be made accessible in an interactive and user-friendly way.

VIII. Other business (agenda item 7)

39. The secretariat reiterated the information about the adoption by ITC at its last annual session of the strategy on reducing GHG emissions from inland transport.

IX. Date and place of next meeting (agenda item 8)

40. The secretariat informed GE.3 that its next, twenty-seventh session was scheduled to take place in Geneva on 1 and 2 October 2024. The secretariat also indicated the initial dates for the two planned session in 2025.

X. Summary of main decisions (agenda item 9)

41. The secretariat summarized the decisions taken by GE.3. The full report of the session, prepared by the secretariat in consultation with the Chair and Vice-Chairs, would be shared electronically after the session for adoption.