Session: What are the costs of greening and adapting transport?

25 May 2023, 16:30-18:00 | Session outline

Climate change-generated disasters and changes in weather conditions affect and will keep on affecting infrastructures and operations of passenger and freight transport networks. Local and national authorities, private stakeholders and international organisations worldwide need to find ways to assess adverse impacts and target limited resources towards projects that will both mitigate climate change as much as possible, and guarantee networks' capacities to sustain, adapt to and overcome future disruptions.

Nevertheless, various challenges exist such as understanding the extent of the resources needed for infrastructure and fleet replacement measures that are at the basis of transport emissions' mitigation. Additional challenges include assessing the risks for infrastructure assets, operations, supply chains and impacted communities from climate-based disruptions.

The low-carbon transition will require a rapid adoption of electric vehicles. Building sufficient new facilities to manufacture these vehicles will be a challenge and require significant spending. Lewis Fulton (University of California Davis) shared insights on the investments needed in electric vehicle (EV) production capacity needed in Europe and the United States to meet ambitious EV sales targets towards 2030. The presentation highlighted a risk of shortfalls in vehicle production and that further investments and supporting policies are needed to build additional electric vehicle manufacturing facilities. Decarbonising transport will also require the adoption of new technologies in emerging economies. Dineth Dhananjaya (University of Technology Dresden, Germany) gave insights into policy scenarios to improve vehicle fuel economy and increase the adoption of EVs in Sri Lanka, highlighting that ambitious policy action is essential.

When investing in new infrastructure, it is essential to understand its effectiveness and estimate any potential unexpected side-effects on travel demand and carbon dioxide emissions. Kuancheng Huang (National Yang Ming Chiao Tung University) presented findings on a modelling framework for estimating the impacts of new road and rail infrastructure in the regions near the India–Bangladesh border.

The increasing pace of the climate crisis and severe weather events is expected to increase the costs of maintaining infrastructure. It will also require an increasing emphasis on future-proofing infrastructure. However, the magnitude of the costs inflicted by severe weather events is uncertain. Thaynara Silva (SNCF Réseau) presented an analysis of the impacts of meteorological events on the French national railway network quantifying both direct costs (such as damage to infrastructure and lost revenues) and indirect costs from increased travel times. The findings highlighted that the number of disruptions is increasing by 1.4% per year. Total delays are also increasing, by 0.9% per year, as are train cancellations (by 11% per year) purely from severe weather-related incidents.

The session concluded by acknowledging the importance of tracking investments related to deploying new technologies and infrastructure, as well as those related to adapting to increased damage imposed by the climate crisis.