



Joint workshop by the Joint Research Centre of the European Commission and the International Energy Agency

The future role of trucks for energy and the environment

Tuesday 8 November 2016

Centre Albert Borschette - Rue Froissart 36 1040 Brussels

BACKGROUND

The road freight sector is at the heart of global economic activity but its relative importance alongside rail and maritime transport varies at the country level. Road freight is particularly important in densely populated areas and regions with a low density of (non-road) network infrastructure, such as South and Latin America and Africa where goods are predominantly moved via road vehicles. Additionally, the final stage of delivery to retail outlets and factories generally relies on road transport.

Road freight vehicles encompass a wide range of categories, from light commercial vehicles with a gross vehicle weight (GVW) of less than 3.5 tonnes to large long-haul trucks with a GVW of 40 tonnes and more. Although freight fleets are outnumbered by passenger cars, they are major sources of oil demand (trucks consume on average up to ten times more fuel per kilometre and travel over ten times more than passenger cars). The on-road movement of freight cargo worldwide uses around 15 million barrels of oil per day (roughly 15% of total global oil demand), and is also a major emitter of CO₂. To put this in context, in 2015, road freight emissions were 2.2 Giga tons which exceeded the entire energy-related CO₂ emissions of Germany, the United Kingdom, Italy, France and Spain combined.

Limiting global CO₂ emissions to a level compatible with the climate goals of the Paris Agreement of the 21st Conference of the Parties (COP21) will require greatly improving the efficiency of road freight vehicles and, more broadly, of the freight operations themselves. However, to date, policies to reduce oil demand from road freight and curb associated CO₂ emissions are limited. Switching traditional fuels to alternative ones such as biofuels, natural gas, electricity or hydrogen is a potentially effective way to reduce oil demand from road freight but the impact on CO₂ emissions will differ depending on which alternative is used. In addition, their widespread adoption has not yet overcome hurdles related to technology, economics and the availability of refuelling infrastructure.

The regulation of heavy-duty vehicle (HDV) efficiency is another important policy opportunity. Unlike for light-duty vehicles, where policy efforts are widespread, HDV efficiency standards have so far been fully implemented in only four countries (United States, Canada, Japan and China). Despite of this, regulatory efforts are underway in several countries (including the EU and India) to reduce fuel consumption and CO₂ emissions from HDVs.

In the EU, HDVs account for around one quarter of road transport emissions, a share that is currently rising. The EU has set a strategy to limit fuel consumption and CO₂ emissions from HDVs. In the short term, the European Commission (EC), the executive body of the EU, aims to propose legislation that would require CO₂ emissions from new HDVs to be certified, reported and monitored. In the medium-term, the EC is considering additional measures to limit the levels of HDVs emissions. These legislative initiatives are aligned with the implementation of the 2011 “*EU White Paper on Transport*” and the recent “*EU Roadmap for moving to a competitive low-carbon economy in 2050*” and propose a number of sustainability-related goals, including the reduction of transport CO₂ emissions by 60% by 2050 (compared to 1990 levels). To achieve this 60% reduction, the EC has set a number of targets, these include (a) halving the use of ‘conventionally-fuelled’ cars in urban transport by 2030, and phasing them out of cities entirely by 2050, (b) achieving CO₂-free city logistics in major urban centres by 2030 and (c) shifting 30% of road freight trips over 300 km to other modes. Further to these, the EU aims to achieve the climate targets set at COP21 by a number of related initiatives aiming at setting up a resilient, resource efficient, safe, climate and environmentally friendly European transport system.

In recognition of the increasing prominence of road freight vehicles in the global energy agenda, the Joint Research Centre (JRC) of the European Commission and the International Energy Agency (IEA) co-organise this workshop as a discussion forum involving a broad range of distinguished experts (from government, industry, international organisations, academia and civil society) in the following areas:

- Potential for systemic changes towards sustainable trends in **road freight activity**, focusing on logistics, inter-modality and ITS-enabled technologies.
- Prospects for **vehicle and fuel technologies** to deliver major energy efficiency improvements and reductions in Green House Gas and pollutant emissions, including the costs and benefits of these technologies.
- **Policy tools** that enable transformational changes in the (road) freight transport sector to deliver on climate as well as on energy security goals.

The results from the workshop are intended to provide valuable inputs to shape upcoming analyses of both international institutions (EC, IEA) and discuss findings and policy messages that shall be considered in their activities. In particular, this includes a forthcoming IEA publication on the current and future role of trucks in the energy sector in the Spring 2017.

Each session will be introduced by invited experts and followed by an open roundtable discussion. Attendance is by invitation only.

AGENDA

8:30 Registration

9:00 Welcome and opening remarks

Piotr Szymanski

Director, Transport and Climate, Joint Research Centre, Energy, EC

Kamel Ben Naceur

Director, Sustainability, Technology and Outlooks, IEA

9:10 Scope of the workshop

9:30 Session 1: Sustainable road freight transport: visions & action plans

Discussion of feasible actions to enhance the environmental and economic sustainability of road freight transport whilst reducing oil demand and CO2 emissions. Different stakeholders will introduce their perspectives to identify options and challenges ahead.

Chair: *Sophie Punte*

Executive Director, Smart Freight Centre

Introductory interventions:

Dimitrios Savvidis

Seconded National Expert, Directorate of Climate Action, European Commission

Road freight in the European strategy for low-emission mobility

Bjarne Pedersen

Executive Director, Clean Air Initiative for Asia

Sustainable road freight transport: an Asian perspective

Magnus Höglund

Head of Sustainable Transport, Trucks, Scania

Scania's vision to drive the shift toward sustainable transport

Roundtable discussion

10:45 Coffee break

11:00 Session 2: Vehicle and fuel technologies

Discussion of the potential of alternative (advanced) technologies and comparison of the main economic, policy and technical barriers for their effective deployment – evaluation of costs (e.g. of upscaling and transitioning to alternative infrastructure) with respect to the societal, environmental and economic benefits of competing technologies.

Chair: *Wolfgang Schade*

Professor, M-Five GmbH Mobility, Futures, Innovation, Economics

Introductory interventions:

David Cebon

Professor, Cambridge University Engineering Department, University of Cambridge

Technologies: decarbonisation potential and barriers to widespread adoption

Manfred Schukert

Senior Manager, Automotive Regulatory Strategy Emissions & Safety, Commercial Vehicles, Daimler

Daimler's advances in efficiency and zero-emission trucks

Oscar Delgado
Senior researcher, International Council on Clean Transportation
Assessing near-term efficiency potential of engine and vehicle technologies

Patrik Akerman
Business Developer eHighway SIEMENS AG
Electric roads for heavy-duty vehicles

Roundtable discussion

13:00 **Lunch**

14:15 **Session 3: Transport system optimisation – logistics and inter-modality**

Discussion of applicable pros and cons of logistics, route optimisation, mode shift and other related measures aiming to cost-effectively reduce the energy use and CO2 emissions from road freight. Policy needs to promote such measures, including potential trade-offs.

Chair: Alan McKinnon
Professor, Kühne Logistics University, Hamburg

Introductory interventions:

Phil Greening
Associate Professor and Logistics, Department of Business Management, Heriot-Watt University

Proven policies to enable more efficient and low-carbon logistics

Nico Anten
Managing Director, Connekt
Lean and Green: the road to zero emissions

Vincent Moal
Logistics Senior Purchases Manager, Procter & Gamble
Procter & Gamble's TRANSFORMERS project

Jacques Leonardi
Senior Research Fellow - Freight, University of Westminster
Best practices in urban freight logistics

Roundtable discussion

16:15 **Coffee break**

16:30 **Session 4: Tour de table and Conclusions**

All attendees will be invited to highlight the key analysis, issues, messages and policy recommendations that should be considered in the upcoming analyses by JRC and IEA.

17:30 **Close**