

AGENDA

Mapping standards for low- and zero-emission electric heavy duty vehicles

EXPERT WORKSHOP

17-18 February 2020

OECD – Conference Centre, Room E
2, rue André Pascal, 75775 Paris, France

■ INTERNATIONAL TRANSPORT FORUM

The [International Transport Forum \(ITF\)](#) at the Organisation for Economic Cooperation and Development (OECD) is an intergovernmental organisation with 60 member countries. It acts as a think tank for transport policy that covers all modes of transport.

The ITF's mission is to foster a deeper understanding of the role of transport in economic growth, environmental sustainability and social inclusion and to raise the public profile of transport policy.

The ITF acts as a platform for discussion of transport policy issues. It analyses trends, shares knowledge and promotes exchange among transport decision-makers and civil society.

■ DECARBONISING TRANSPORT INITIATIVE

The [ITF Decarbonising Transport Initiative \(DTI\)](#) is a key instrument developed to help governments and industry to translate climate ambitions into actions. The initiative brings together a partnership that extends far beyond the ITF's member countries. It includes work streams aiming to:

- track progress to evaluate how current mitigation measures contribute to reaching objectives for reducing transport CO₂;
- develop in-depth sectoral and focus studies to identify effective policies in specific modes (e.g. road transport) and thematic areas (e.g. cities);
- bring policies together in a catalogue of effective measures, to support countries to develop their GHG emission mitigation strategy in transport;
- support the policy dialogue, leveraging on extensive engagement with the United Nations Framework Convention on Climate Change (UNFCCC), including the ITF's designation as focal point for transport of the Marrakech Partnership for Global Climate Action (MP-GCA).

The programme of work of the DTI also includes targeted activities that help declining available policy levers for decarbonising transport from the perspective of a specific country or global region.

The next stage of the DTI will build on the activities and outputs of these work streams to establish common interest groups on low-and zero-emission enabling solutions, with a scope focused on specific modes of transport, with four focal areas: light duty road vehicles, heavy duty road vehicles, shipping and aviation.

Each of these groups aims to:

- bring together governments interested to learn from experiences that have been developed by their peers and share their own;
- facilitate the dialogue between governments, the private sector and other stakeholders; and
- ease access to the knowledge available from the ITF and its partners.

The groups will also inform analyses on the status and prospects of policy developments and market responses, strengthening the collective understanding of the effectiveness of different measures and allowing a continuous update of the catalogue of effective measures.

■ WORKSHOP BACKGROUND

Low- and zero-emission enabling vehicles (LZEEVs) – including in particular fuel cell vehicles (FCVs) and plug electric vehicles (PEVs), i.e. battery electric vehicles (BEVs) and plug-in hybrids (PHEVs) – are central enablers of zero or near-zero emissions of greenhouse gases and local pollutants for road transport. A transition to low- and zero-emission mobility can also have major impacts on important parts of the industrial system, in particular in the automotive, energy transformation and transportation infrastructure sectors.

A key step in the policy process to advance the development of innovative technologies is the establishment of technical standards, since they reduce investment risks, foster cost reductions and allow scaling up adoption. LZEEVs are no exception to this, especially in the areas of vehicle safety, environmental performance and charging/refuelling infrastructure.

Extensive multilateral work has already been carried out in the area of technical regulations on FCEV safety in the framework of the United Nations (UN), the International Organization for Standardization (ISO) and the Society of Automotive Engineers (SAE).

The development of standards and regulations on PEVs has also been subject to significant developments in the framework of the UN, ISO, the International Electrotechnical Commission (IEC), SAE and the CHAdeMO association.

Additional work across all these organisations has also addressed the development of LZEEV-relevant standards dealing with the protection of occupants in the event of collisions and the protection of the environment, and significant synergies (starting from the joint reliance on electric motors) will offer opportunities for the integration of FCEV and PEV technologies.

■ WORKSHOP OBJECTIVES

The workshop aims to understand what has been done so far and what is still left to do with respect to the development of standards for the effective deployment of refuelling/charging infrastructure for LZEEVs.

The workshop will focus on the identification of standardization/regulatory gaps for the large-scale deployment of LZEEVs, looking specifically at the case of heavy duty vehicles (including buses, medium and heavy freight trucks) and FCEVs, but also covering other key LZEEV technologies (namely PEVs), given the important opportunities for their synergetic integration.

The ITF intends to do this gathering key players among standardization authorities, international organisations, national and local governments, industrial stakeholders, energy market regulators, research laboratories/academia, non-governmental organisations, philanthropic institutions and other relevant stakeholders having an stake in the LZEEV development.

Insights resulting from the development of this workshop will be included in a workshop summary document and in a dedicated report. These outputs will focus on the vehicle and refuelling/charging safety and environmental standards for LZEEVs. They will include recommendations on issues that still need to be addressed to facilitate the LZEEVs deployment, especially in the area of heavy duty vehicles.

These insights will provide valuable inputs stakeholders that are actively involved in the clean mobility transition. The event and following outputs will provide significant help to understand steps should be undertaken to address remaining standardization barriers on LZEEVs.

The outcomes of the workshop will also serve to inform the ITF modelling work on the transition of passenger and freight transport towards clean mobility.

■ AGENDA – DAY 1

08:45 – 09:15 **Welcoming Coffee**

09:15 – 09:30 **Welcome and overview of workshop objectives and structure**

- Introduction to ITF and its Decarbonising Transport Initiative
 - Introduction on workshop background, objectives and structure
 - Short self-introduction by participants
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09:30 – 12:00 **Session A – Vehicle and infrastructure safety**

Chair: Klaus Steininger, European Commission (DG CLIMA)

Regulations and standards on electric vehicles

Overview of existing safety regulations/standards on battery electric, plug-in hybrid and fuel cell electric vehicles, as well as ongoing activities for their update and development

- Overview of regulations and planned activities regarding electric heavy duty vehicles – François Cuenot, United Nations
- Overview of standards and planned activities regarding electric heavy duty vehicles – Michael Herz, Carmeq and ISO technical committee on electrically propelled vehicles
- Battery electric and plug-in hybrid vehicles – Henrik Wentzel, Scania
- Heavy duty HFCV safety issue and research plan in Korea (Focus on buses)– Si Woo Kim, Korea Automobile Testing & Research Institute
- Infrastructure perspective – Nico van den Berg, Ministry of Infrastructure and Water Management, the Netherlands

Discussion on areas where additional work is necessary.

12:00 – 13:00 **Family photo and lunch**

13:00 – 15:30 **Session B – Refuelling and charging infrastructure**

- State of play in the case of Europe and the Alternative Fuels Infrastructure Directive, Dario Dubolino, European Commission (DG MOVE)

Part 1 – Charging infrastructure for vehicles using battery storage

Chair: Leah O'Dwyer, Chargepoint

Regulations and standards related with charging infrastructure for electric vehicles

Overview of existing regulations/standards on battery electric and plug-in hybrid charging infrastructure, as well as activities for their update and development.

- Overview of existing standards – Jacques Delaballe, Electrical power/energy transfer systems for electrically propelled road vehicles and industrial trucks Technical Committee (IEC TC 69), International Electrotechnical Commission (IEC)
 - Perspective on standardisation developments – CharIn, Claas Bracklo, VDA
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- Perspective on standardisation developments – Dave Yoshida, CHADEMO
- Communication protocols – Lonneke Driessen-Mutters, Elaad
- Electric highway systems – Helena Andersson,, Trafikverket

Discussion on areas where additional work is necessary.

15:30 – 16:00 Coffee break

16:00 – 18:30 Session B – Refuelling and charging infrastructure

Part 2 – Hydrogen refuelling

Chair: Pierpaolo Cazzola, ITF

Regulations and standards on safety of hydrogen refuelling (focus on)

Overview of requirements for the fuelling station or the fuelling station/vehicle interface and other regulatory systems and devices for the production, storage, transport, measurement and use of hydrogen.

- Overview of international standards – Francoise de Jong, CEN CENELEC
- Country experience: the case of Europe – Pietro Moretto, European Commission (DG JRC)
- Toyota's vision and involvement in FC Heavy Duty standardization - Vincent Mattelaer, Toyota Motor Europe
- Country experience: the case of Korea – Soonil Jeon, Vice President, Hyundai Motor
- Country experience: the case of Japan – Kazumi Maehara, JXTG, Japan

Discussion on areas where additional work is necessary.

18:30 End of Day 1

■ DINNER

Dinner will be held in the evening. All participants are invited to join an informal dinner at the restaurant "Aero" – 3 Place de Passy, 75016 Paris, starting at 19:30.

■ AGENDA – DAY 2

08:30 – 09:00 Welcoming Coffee

09:00 – 12:00 Session C – Integration of electric vehicles in environmental standards/regulations

Part 1 – Vehicles

Chair: Pierpaolo Cazzola, ITF

Regulations and standards integrating electric vehicles in environmental standards/regulations such as pollutant emissions and fuel economy standards, policy frameworks giving waivers to access/circulation restrictions to environmentally

friendly vehicles,, end-of-life regulations and sustainable supply chains

- An European view on zero-emission heavy goods transport – Klaus Steininger, European Commission (DG CLIMA)
- Integration of electric heavy duty vehicles in fuel economy standards and pollutant emission regulations in other major markets– Felipe Rodriguez, ICCT
- Country experience: frameworks facilitating the development of policies on vehicle circulation and/or road charges in Europe: focus on the integration of electric vehicles – Lucy Sadler, Sadler Consultants
- Regulatory frameworks on the end-of-life treatment of vehicles and second life of key components (namely automotive batteries) – Jan Tytgat, Umicore
- Is there a role for regulation to increase the transparency and sustainability of supply chains for battery and fuel cell materials? – Luca Maiotti and Benjamin Katz, OECD
- The European Battery Alliance and measures to increase the sustainability of batteries and fuel cells – Cesar Santos Gil, DG GROW

Discussion on areas where additional work is necessary.

12:00 – 13:00 **Lunch**

13:00 – 15:30 **Session C – Integration of electric vehicles in environmental standards/regulations**

Part 2 – Energy vectors

Chair: Pierpaolo Cazzola, ITF

Regulations and standards related with the life-cycle characteristics of energy vectors needed for electric vehicles

- Accounting for upstream carbon emissions: the experience developed in California with the low carbon fuel standards – Colin Murphy, UC Davis
- The EU Fuel Quality Directive: where do we stand? – Klaus Steininger, European Commission (DG CLIMA)
- The role of standards to deal with different hydrogen production pathways – Guarantee of Origin – Françoise de Jong, CEN CENELEC
- Is there a need for a regulatory framework accounting for a life cycle perspective of vehicle technologies and fuels? And how should BEVs and FCEVs be integrated in it? - William Lilley, Aramco
- Beyond batteries and fuel cells: integrating natural gas, biofuels and electrofuels in low-carbon emission regulations: experience from the JEC analysis – Monica Johansson, Volvo

Discussion on areas where additional work is necessary.

15:30 – 16:00 **Coffee break**

16:00 – 17:00 **Next steps and closing remarks**
