

## **HDV CO<sub>2</sub> emissions, stakeholder meeting**

**Brussels, 16 September 2014**

### **Summary of discussion**

#### **Morning session**

##### **Commission strategy on reducing HDV CO<sub>2</sub> emissions and fuel consumption**

The Commission introduced the discussion with an outline of the main elements that led to shaping the strategy adopted on 21.5.2014: baseline trends, studies that assessed the potential for HDV CO<sub>2</sub> emission abatement, existing market barriers, and the need to address the current knowledge gap as HDV CO<sub>2</sub> emissions were currently not measured and registered. The strategy hence focussed, in the short term, on addressing the latter gap and remained open as to medium term actions that could be considered to curb HDV CO<sub>2</sub> emissions.

The Dutch representative welcomed the strategy but considered that the level of detail on medium term actions to curb HDV CO<sub>2</sub> emissions was insufficient. He also referred to the Dutch fuel policy based on a larger share of sustainable fuels and offered to share this with the Commission. The Swedish Transport Authority, having referred to the EU goal of -60% transport emissions in 2050 vs 1990 enquired on possible quantitative targets for HDV emissions.

ACEA comments were supportive of the Commission strategy, considering the EU approach as the most sophisticated one compared to policies pursued in other parts of the world to address HDV CO<sub>2</sub> emissions. It enquired on possible links with the Weights & Dimensions Directive currently under discussion. Referring to modal shift that was mentioned by the Commission as one of the means of addressing road transport emissions, it underlined its preference for a "co-modal" approach as it was clear that road freight would continue to play a core role. The IRU also welcomed policies aiming at increased transparency on the HDV market as curbing fuel consumption was a key priority of transport operators. The IRU representative further took the view that revenues collected from HDV transport in the form of excises, road user charging or possibly a future inclusion into the ETS should be earmarked to reduce the road transport footprint.

Transport & Environment, while welcoming the adoption of a strategy, expected more clarity on future regulatory developments. Making a reference to the assessment of the Commission on market barriers it enquired on whether other market barriers than the identified knowledge gap would be addressed. It further expressed concerns on a strategy using a simulation tool that will remain mainly operated by OEMs.

Participants supported increased transparency. They further emphasized the importance of space/urban planning to reduce traffic congestion and thereby curb emissions, as well of driver training that could cut emissions significantly.

The Commission clarified a number of points. It noted that while both were contributing to curb HDV CO<sub>2</sub> emissions there was no formal link between the foreseen HDV CO<sub>2</sub> certification and the current Weights & Dimensions' Directive review. No formal quantitative target had been set at this stage for HDV emissions. Some assumptions on annual improvements of HDV energy efficiency had been introduced in the baseline scenario of the Impact Assessment that underpins the May 2014 Communication. Market barriers were complex to assess and further work would be necessary with an improved outreach of very small firms' behaviour to better grasp impediments to the adoption of cost effective fuel saving innovations. The Commission asked for written comments on the strategy by 31 October 2014.

## Simulation tool VECTO presentation

The Commission introduced this session with a presentation of the VECTO HDV CO<sub>2</sub> simulation tool's main features and carried out a dry run demonstration of its main features.

Participants enquired on the programme of testing foreseen under the subsequent phase of development of the tool. They further enquired on the possibility to adjust parameters such as road design and topography, the outside temperature, and the wheels and rear vehicles' weight to reflect the possible use of light material such as aluminium.

Questions were also raised as regards the tool's current design: would the full vehicle emissions' be covered? Would a forward calculating tool be considered in due course as that current one did not have such features? How would VECTO contribute to increase market transparency? What was the timeline for a legislative proposal?

Participants having also enquired on how values of bodies and trailers had been defined as input default values, ACEA and CLCCR confirmed that these values had been proposed by CLCCR for the various truck categories and incorporated into the simulation parameters. As regards the calculation of the airdrag test, CLCCR mentioned an ongoing study on the possible use of CFD (Computational Fluid Dynamics) tools for the airdrag calculation and was ready to share it with the Commission as soon as its findings would be available, possibly by end-October.

The Commission provided a number of clarifications on questions raised. The next programme of testing would need to be defined together with OEMs as it would rely on the availability of test vehicles. A review of the VECTO tool's design with forward looking features would be scheduled at a later stage but was not an immediate priority. The advantage of the simulation approach was indeed that it would facilitate the customisation of simulation parameters to reflect the variety of HDVs and contribute to more transparency in the choice of products. Further consultations would take place in an Impact Assessment that would follow in 2015 the current cost-benefit analysis, and in the Editing board that is being established by the Commission to prepare certification legislation. While the eventual legal setting for certification legislation was not yet formally decided, the working assumption was that it would be introduced under the existing Type Approval framework, with a Commission proposal tentatively foreseen as of end 2015.

## Afternoon session

### Options for HDV CO<sub>2</sub> emissions certification and validation

TÜV Nord introduced this point of the agenda and presented five possible options for HDV CO<sub>2</sub> certification that were proposed in the current interim report of the options' assessment<sup>1</sup>: (i) the use of the VECTO simulation tool with extensive testing of input parameters; (ii) a simplified use of the VECTO tool with reduced testing effort for input parameters and recourse to default values; (iii) chassis-dynamometer tests as currently for cars; (iv) on-road fuel consumption measurements; and (v) simulation and transient engine tests as currently under the "Hardware-in-the-Loop Simulation" (HILS) methodology. TÜV Nord further noted a number of issues that would need to be addressed: the need to define families of vehicles and components; and -as a large share of HDVs were multi-stage vehicles- the possible recourse to a two stage certification process with first OEMs certification of incomplete vehicles and second body/trailer manufacturers second stage certification of completed vehicles. Conformity of Production (CoP) could be either focussed on input parameters,

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<sup>1</sup> *"Cost-benefit analysis of options for certification, validation, monitoring and reporting of heavy-duty vehicle fuel consumption and CO<sub>2</sub> emissions"*, Interim report by TNO, TÜV Nord and ICCT, available on : [http://ec.europa.eu/clima/policies/transport/vehicles/heavy/docs/tno\\_2014\\_interim\\_report\\_en.pdf](http://ec.europa.eu/clima/policies/transport/vehicles/heavy/docs/tno_2014_interim_report_en.pdf)

on the process of certification, or have recourse to a simplified on-road testing with the latter option having the advantage of possibly also serving as validation of the certification process.

Transport & Environment took the view that the CoP and validation of HDV CO<sub>2</sub> certification should not have recourse to VECTO as it would be unwise to use the same tool twice. While it further suggested that PEMS test methodologies defined under EuroVI could be an option, TÜV Nord considered that this methodology was not easy to replicate for the purposes of CO<sub>2</sub> emissions. PEMS testing was however clearly within the range of options that would be assessed.

Scania considered that the validation of the tool should not be part of the certification. Together with ACEA it also considered that CoP should focus on input data.

The Swedish and the German authorities' representatives having enquired on the relationship between vehicles' CO<sub>2</sub> emissions measurement with VECTO under a new registration legislation and the existing engine CO<sub>2</sub> measurement under the Euro VI legislation, the Commission indicated that as an outcome of the Lot3 report it appeared that the existing engine fuel map measurement methodology under EuroVI would not be precise enough for the purposes of VECTO simulations: an amendment to the existing fuel map (which is needed as VECTO input) would be needed, defining the engine fuel maps in a more accurate way.

Participants further made a number of comments on the importance of customised air drag values calculation for trailers. While ACEA appeared clearly in favour of recourse to CFD tools, the Commission considered that this remained an open issue and that the consultant's current cost benefit analysis would compare the current on-road air drag test based method of VECTO with recourse to CFD calculated values. Questions having been raised on the possible errors' tolerance in the simulation by VECTO, participants were referred by TÜV Nord to the "Lot3" report<sup>2</sup> that addressed this issue.

### **Defining monitoring and reporting options**

TNO presented the relevant section of the abovementioned interim report<sup>3</sup> addressing the monitoring and reporting of HDV CO<sub>2</sub> emissions upon their certification. Options were currently not defined as they relied on further consideration of the design of certification, assumptions to be made on data volumes, data sources and reporting needs. Feedback from stakeholders would help shaping this part of the analysis.

ACEA and IRU emphasized that market needs would have to be taken into account in the design of monitoring: OEM customers would need to be able to retrieve the information to inform their vehicle purchase choices. Assumptions on various drive cycles should be monitored so as to adjust vehicles to the possible in-use drive profiles of transport operators. ACEA also underlined that appropriate metrics should be taken into consideration such as g/tkm CO<sub>2</sub> to facilitate comparability with other transport modes. The monitoring information needed would go beyond possibilities of the Certificate of Conformity (CoC).

Transport & Environment suggested that as much information as possible should be monitored including on complete vehicles (i.e. multi-stage vehicles with bodies/trailers). Input data should also be included in the monitoring.

IRU further referred to the lack of harmonised registration in the EU that should be addressed: some Member States were allegedly registering the combination of tractor-trailer as one vehicle, and others separately.

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<sup>2</sup> [http://ec.europa.eu/clima/policies/transport/vehicles/heavy/docs/final\\_report\\_co2\\_hdv\\_en.pdf](http://ec.europa.eu/clima/policies/transport/vehicles/heavy/docs/final_report_co2_hdv_en.pdf)

<sup>3</sup> [http://ec.europa.eu/clima/policies/transport/vehicles/heavy/docs/tno\\_2014\\_interim\\_report\\_en.pdf](http://ec.europa.eu/clima/policies/transport/vehicles/heavy/docs/tno_2014_interim_report_en.pdf)

The SMMT representative enquired as to the lead time for this work as Member States needed to make the necessary preparations. The Commission indicated that this would be taken into consideration in due course.

In view of an expected increasing market share of low carbon fuels several participants also noted the foreseeable need in the future to extend monitoring to a well-to-wheel account of CO<sub>2</sub> emissions.

The ICCT representative provided further information on an ongoing stakeholder enquiry on options, and asked for feedback from stakeholders by the end of September 2014.

### **Concluding remarks**

The Commission in its concluding remarks indicated that another stakeholder consultation would take place in January 2015 when the findings of the cost-benefit analysis of options are known. It remained meanwhile available for further bilateral discussions with stakeholders. All presentations made in the meeting would be posted on the Commission's website.

