World Light duty Test Procedures: Fiction or Reality?

Philippe Jean
Head of Unit – Sustainable Mobility and Automotive Industry
DG Enterprise and Industry

Brussels, 6 May 2015
World Light duty Test Procedures (WLTP)

1. What?
2. Why?
3. Where do we stand?
4. Main achievements
5. Future steps:
   - in the EU
   - on global level
WLTP: what?

- Whole set of emission certification test procedures and requirements in a Global Technical Regulation
- UNECE WP.29 gives formal mandate to for the first phase that is later prolonged until 2016 to WLTP IWG

=> Phase I: development of a new, more realistic WLTC test cycle including test procedures focusing on CO2 emissions
WLTP: why?

- Global harmonisation of tests and requirements => Industry interest

*Existing NEDC, perceived as outdated and unrealistic. The WLTP modelled on real driving should provide:*

- Better information on and comparison of fuel consumption => Consumer interest

- Incentives for developing the most efficient technologies to improve fuel consumption also in real driving (and not the most efficient technologies on an artificial test cycle) => Consumer interest
WLTP: where do we stand?

- Adopted as UNECE GTR (global technical regulation) n° 15 by WP.29 in March 2014: "phase Ia WLTP" => complete certification cycle
- Now: further "nice-to-have" elements being added: road load determination, electrified vehicles, reduce the number of tests by calculation,... being developed by WLTP IWG: "phase Ib WLTP"
- In parallel: WLTP being transposed into EU law with administrative and some technical elements being added
### WLTP: main achievements

**Emission test cycle**

1. Determine road loads
   - ↓
   - (2) Test vehicle in the lab on chassis dyno
     - ↓
     - (2a) Driving pattern  (2b) Test procedures

*NB: colloquial reports sometimes relate the "fuel testing scam" only to shortcomings of (2a) – but it's the whole test sequence stupid!*
WLTP: main achievements

Road load testing:

- Develop equivalent methods: coast down or torquemeter or wind tunnel & flat belt
- Close loopholes by better defining certain issues, e.g. tyre pressure, brake conditions
- Road load families => reduced # of tests
- Alternative routes: default road load values from table and calculation
WLTP: main achievements

Driving pattern:

- Collection of driving data from EU, US, Japan and India => WLTP database
- Low, Medium, High, Ex-High speeds parts
- Identification of relevant dynamic parameters for CO2 emissions
- Construct WLTC drive trace by combining short trips for a "best fit" of these parameters to WLTP database
WLTP: main achievements

Test procedures:

- Interpolation vehicle families => limitation of tests by interpolations for effects of options
- Various corrections, e.g. battery charging
- Better setting of chassis dyno parameters
- More realistic test masses (consideration of options, pay loads)
WLTP: future steps

In the EU:

- Preparation of legal text ongoing
- Various additional technical elements, such as corrections for European ambient temperatures and violations of driving trace are being added
- Administrative elements, e.g. conformity of production statistics & rules
- Vote in TCMV possible by the end of 2015
- Application at type approval possible as from 2017/18, political decision still open
WLTP: future steps

In the EU:

- CO2 monitoring Regulations (EC) 443/2009 (cars) and 510/2011 (vans), NEDC <=> WLTC
  - CO2 emission targets to be adapted
  - Until 2020/21: WLTC results to be "translated back" into equivalent NEDC values
  - Complex mathematical model,
  - 2020/21+: manufacturer-specific targets on WLTC

- CO2 labelling: WLTP offers much more comprehensive information than NEDC
WLTP: future steps

On global UNECE level:

- Phase II (until 2018)
  - mandate by WP.29 in November 2015 (?)
  - some more "left-overs" for WLTC
  - "feed-back" approach for re-assessing/challenging road load values determined by manufacturer at type approval (?)
  - other elements of emission certification: evaporative emissions, durability,...

- Phase III (2019 – 2022): details still to be defined
For further information:

http://ec.europa.eu/growth/sectors/automotive

Thank you for your attention!