



World Light duty Test Procedures: Fiction or Reality?

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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
- 3 phases: 2008 – 2014 (I), 2015 – 2018 (II), 2019 – 2022 (III) informally agreed by GRPE
- 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*Existing NEDC, perceived as outdated and unrealistic.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 \Leftrightarrow 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!