REAL DRIVING EMISSIONS.

RESTRICTION OF POLLUTANT VALUES ON THE ROAD.

In addition to WLTP, RDE (Real Driving Emissions) will also be compulsory for all vehicle manufacturers in the EU as well as in Switzerland, Turkey, Norway, Liechtenstein, Israel and Ireland from September 2018. In these RDE tests, the pollutant emissions such as particulate matter and nitrogen oxides (NOx) are measured directly on the road. This method determines average emission values that can be expected during everyday driving.

In order to further reduce these pollutant values, the BMW Group employs various technologies for reducing exhaust emission in its models.

The BMW BluePerformance measures reduce the emission of nitrogen oxides in diesel engines. The BMW Group uses devices known as nitrogen oxide (NOx) storage catalytic convertors in order to reduce nitrogen oxide emissions. In addition, and depending on the model, Selective Catalytic Reduction (SCR) with AdBlue® – a urea solution – converts up to 90% of the nitrogen oxides into water vapour and similarly harmless nitrogen. The BMW Group was the first manufacturer to introduce this combination into series production.

Since 2006, diesel vehicles have additionally been equipped with particulate filters as standard in order to reduce particulate matter. In petrol-engine models, too, special particulate filters are gradually being introduced.

In this way, the BMW Group is able to comply with the low threshold limit values of the EU6c exhaust emissions standard, which is compulsory for all new vehicles as from September 2018. The EU6c exhaust emissions standard prescribes lower particulate limits for petrol-engine vehicles compared to EU6b. The same limits apply for diesel-engine vehicles within the cycle for both EU6b and EU6c.

FALLING VALUES.

INCREASING CHALLENGE.

The EU exhaust emissions standard defines the valid limits for exhaust emissions such as nitrogen oxides and particulate matter within the EU. The limits vary according to engine and type of vehicle. For the benefit of climate protection and air quality, the limits undergo increasing intensification. This confronts automobile manufacturers with new challenges.

In case of questions regarding to WLTP or RDE please contact your BMW Service Partner or inform yourself in the internet: www.bmw.com/WLTP

WLTP AND RDE.

THE MILESTONES.

1992

NEDC

Introduction of NEDC (New European Driving Cycle).

09/2017

Transition phase

Stepwise transition to WLTP and RDE tests for new type inspections. Communication still with NEDC values.

09/2018

WLTP & RDE for new vehicles

New vehicles: certification in accordance with WLTP. Adherence to the particulate limit values under RDE conditions. As a result, the CO2 emissions and consumption values will be comparable for all new vehicles.

09/2019

RDE for all vehicles

All vehicles: adherence to the nitrogen oxide limit values under RDE conditions.

01/2021

WLTP & RDE for all vehicles

All vehicles: communication of WLTP values in countries that adopt the EU legislation for the approval of vehicles.

CONSUMPTION & EMISSIONS

THE BMW GROUP REQUIRES THE NEW TEST PROCEDURES WLTP & RDE.

BMW GROUP THE NEXT 100 YEARS

Rolls-Royce Motor Cars Limited

MORE EVERYDAY RELEVANCE.

LESS AMBIGUITY.

In 1992, the New European Driving Cycle (NEDC for short) was introduced. Since then, this procedure has been used to determine the fuel consumption and emission values of vehicles. However, the conditions of this laboratory test are disadvantageous in determining realistic consumption and emission values.

From September 2018, therefore a new driving cycle called WLTP (Worldwide Harmonized Light Vehicles Test Procedure) is to replace the NEDC. This laboratory test will also be supplemented by an emissions test that measures pollutants directly on the road: RDE (Real Driving Emissions). The new test procedures will enable consumers to better estimate their vehicle's fuel consumption and emissions in future.

"The new test will ensure that lab measurements better reflect the on-road performance of a car."

European Automobile Manufacturers Association

CHANGING VALUES.

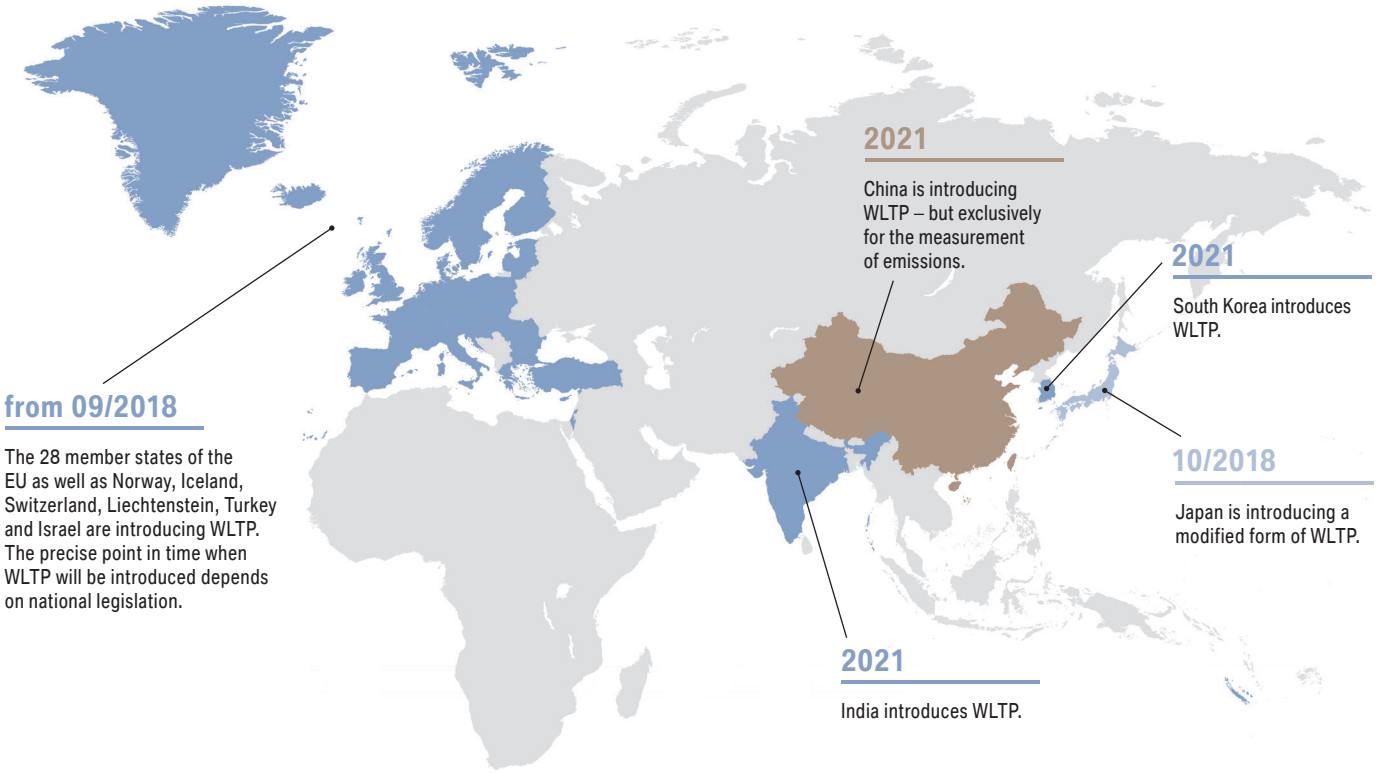
FROM NEDC TO WLTP.

The new testing procedure of WLTP is based on an approximation of the test conditions to real-world circumstances, which means that the values determined will also have a greater relevance to reality. Among the changes this involves redefined, significantly stricter test conditions and higher speeds together with a substantially longer test duration (30 instead of 20 minutes).

To obtain a more precise determination of CO2 emissions, the new test procedure includes not only standard equipment – as was previously the case – but also all special equipment options of a vehicle. This produces two values for each type of vehicle: the lowest and highest possible standard consumption value according to aerodynamics, weight and rolling resistance. Thanks to WLTP, you will be able to better assess a vehicle's consumption and CO2 emissions in the future. In the case of a specific vehicle configuration the individual standard value will be indicated directly. In spite of the great accuracy, deviations are of course also possible with this test procedure. Everyday consumption and CO2 emissions continue to be subject to the different conditions of topography, climate and personal driving technique. The traffic situation, the current load carried and the use of devices such as the air conditioning system are further influences on the consumption of a vehicle. One thing is clear: the test conditions are more realistic than before, which means that higher fuel consumption and CO2 values as well as lower ranges for electric vehicles can be expected on paper. However, this will not have any adverse effect on the real fuel consumption or range. Furthermore, the BMW Group is always working on new technologies in order to improve consumption and range.

WLTP INTERNATIONAL.

WHO CHANGES OVER WHEN.



The BMW Group is already working on the transition to the new test procedure and is preparing its product portfolio step by step with new vehicles, new engine versions or technical revisions. This will ensure that all vehicles within the entire fleet of the BMW Group comply with the applicable legislative framework at all times.

From September 2017, the WLTP will be compulsory for new type approvals. However, the legislator specifies that the values measured with WLTP will initially be communicated with a calculation translating it back to NEDC values. The EU Commission has developed a correlation technique for this purpose, which will be binding to an equal extent on all vehicle manufacturers. This phase is intended to simplify the transition. Its duration will depend on the respective national legislation and will thus vary from market to market.

From September 2018, all manufacturers will be obliged to test in accordance with WLTP for vehicles sold in the EU as well as in Switzerland, Turkey, Norway, Liechtenstein, Israel and Ireland.

Finally, by December 2020, all countries that adopt the EU legislation for vehicle will have to indicate and communicate WLTP values for all vehicles.

Test procedure	NEDC	WLTP
Test duration	20 min.	30 min.
Test distance	11 km	23,2 km
Time spent stationary	25%	13%
Test phases	urban, extra-urban, (combined)	Low, Medium, High, Extra-high, (combined); (plus „city" for electric vehicles and vehicles with plug-in-hybrid drivetrain)
Speed	Average: 34 km/h Maximum: 120 km/h	Average: 46,6 km/h Maximum: 131 km/h
Start temperature	20-30° C Cold engine start	14° C (tested at 23° C; corrected for 14° C) Cold engine start
Power	Average: 4 kW/h Maximum: 34 kW/h	Average: 7 kW/h Maximum: 47 kW/h
Special equipment options	Not taken into consideration.	All equipment options are considered in terms of their influence on aerodynamics, weight and rolling resistance.