

Submitted by the Expert from the United States of America
Group of Experts on Pollution and Energy (GRPE)

United States EPA Comments on the WLTP Proposed Roadmap

The United States Environmental Protection Agency (US EPA) supports the global harmonization of light duty test procedures. The benefits to the global auto manufacturers are self-evident in that it reduces testing burden and allows for uniform content to be shared among exported vehicle platforms, with the subsequent cost savings. There are also benefits to the regulatory agencies worldwide in that it allows benchmarking and provides a common metric for emissions control. In an age where air pollution from the transportation sector—including the impact from greenhouse gas emissions—is a critical issue facing countries around the world, the need for harmonization is a shared responsibility and objective to strive to achieve.

The United States has reviewed the proposal for the WLTP road map and has serious concerns going forward as the issues are currently framed and being discussed. We understand that one of the driving factors has to do with the time frame under which the parties are currently considering the concept of the WLTP for development of the GTR. We also believe that it may be possible to address some of the concerns discussed below by agreeing to jump start the process using existing drive cycles and test procedures as the framework for our GTR discussions.

First, the US would like to provide an overview of our concerns as regards the current WLTP Roadmap. Specifically, the US EPA is concerned that:

- It appears that the WLTP scope is expanding beyond the development of test cycles and test procedures and into the area of program development (e.g., onboard diagnostics and in-service conformity).
- It appears that much of the work will be done in parallel rather than in series, as we would prefer.
- We believe the WLTP should be developed with an eye toward state-of-the art test facilities rather than being developed in a way to ensure continued use of existing facilities.

We recommend that Phase I of the WLTP effort concentrate on drive cycle development and that test procedure development be reserved for Phase II. That is, we believe that these should be conducted in sequence and not in parallel. As has been discussed, this is the most critical and data-intensive component of the WLTP process. We fear that the ambitious timeline could threaten the quality of the outputs, and hence the subsequent regulations that result, if the resources at hand are spread too thinly across too many parallel efforts.

We also recommend that the WLTP effort remain focused on drive cycles and test procedures, and that it not be expanded in scope to cover programmatic elements such as durability provisions, onboard diagnostics, and in-use or real world compliance and enforcement.

Further, we recommend against limiting the WLTP effort by requiring that it accommodate outdated existing facilities and/or existing programs such as onboard diagnostics (OBD). We recommend that criteria such as these not be part of the WLTP effort as they may serve only to hinder development of the drive cycle and test procedure elements. When it is appropriate to do so, the WLTP group can be allowed to focus the appropriate attention on such criteria for the purpose of informing interested parties of how WLTP would impact existing facilities and programs. That way, interested parties are aware of the implications of a move toward the new WLTP procedure. In short, the WLTP effort should focus on developing the best possible harmonized drive cycle and test procedures.¹

We are also somewhat confused as to the basic philosophy and timing for developing the off-cycle test procedure. The United States considers the off-cycle portion of WLTP to be one of the most important elements of the effort, since it helps differentiate driving as represented in a single test procedure from more “real-world” driving. Given the important role that this test procedure plays, we believe that it should be captured by a more aggressive drive cycle. However, we believe that the off-cycle portion of the effort can only be defined once the “on-cycle” or the base drive cycle development has been completed.

Some discussions during development of the current roadmap suggest an approach to controlling off-cycle emissions through the use of a Portable Emissions Measurement System (PEMS), and a procedure similar to the OCE gtr procedure, which takes advantage of WNTTE (world not-to-exceed) standards. We believe that there may be a role for this in future compliance and standard setting, but that this will not be sufficient to provide a repeatable and real-world fuel economy or greenhouse gas emissions test procedure for the purposes of benchmarking vehicles. Instead, we recommend a certification/type approval drive cycle capable of ensuring that off-cycle operation is controlled.

We would also prefer a drive cycle and test procedure capable of ensuring that mobile air conditioning (MAC) emissions are controlled and measured repeatably. However, we see merit in the possibility of having a tool that can model the effectiveness of various MAC systems at limiting emissions. That said, we believe that the model should be correlated to an actual test procedure to ensure its validity and that the model should use real component measurements as inputs when possible.

We also offer that there is a way to accelerate the development of the WLTP by agreeing to have the technical experts utilize and review existing drive cycles and test procedures that address driving patterns or conditions that would be covered by a WLTP gtr. We recommend that the WLTP working group consider using the existing US procedures as a framework for any GTR development, and we would welcome other relevant existing procedures and drive cycles to be included in this analysis as well.

We believe the US Federal Test Procedure (US FTP) that has been used for nearly 40 years of passenger car and light truck emissions testing and compliance provides a platform for

¹ In fact, OBD is mentioned throughout the current roadmap and its mention highlights our concern that the WLTP roadmap appears to stray from drive cycle and test procedure development into other areas that, in our opinion, are not consistent with the original goal of the WLTP effort.

the GTR development to proceed. In the 1990s, US test procedures were updated to include an off-cycle component—the US06—that sought to capture and control emissions during aggressive, high speed driving. Also added during the 1990s were two other off-cycle test procedures: the SC03 that sought to capture and control emissions during mobile air conditioner operation;² and, the cold FTP that sought to capture and control emissions during cold temperature operation (-7 degrees C).

Additionally, the US EPA has recently issued a 5-cycle fuel economy labeling rule that determines the official fuel economy of a vehicle using the five cycles of note in the US—the US FTP, the highway fuel economy test (HFET), the US06, the SC03, and the Cold FTP. While the recent “5-cycle rule” is not used in the US for the purpose of determining greenhouse gas compliance, it could be conceptually. It is not so used at this time due primarily to the legal situation in the US as concerns fuel economy and greenhouse gas emission control.

In light of the very short timeframe afforded the WLTP effort, we recommend that the US test procedures be considered as the framework for world harmonized test procedures. A complete set of test procedures and drive cycles exist today and not considering those for use as world harmonized test procedures does a disservice to the intent of Article 1 of the 1998 Agreement.

By agreeing to use an existing framework we can provide data readily on the overall benefits and effectiveness of the program. Once in place, the WLTP group can begin the process of identifying areas in need of improvement, such as harmonizing a drive cycle or a series of drive cycles, in order to ensure the emission control necessary to satisfy the unique needs of each Contracting Party.

Short of an agreement within GRPE to begin with the framework of the US test procedures, the United States is in the difficult position of continually comparing our highly effective, existing program to a developing program to ensure that we do not backslide in any way. We are, of course, open to drive cycles and test procedures of other Contracting Parties being considered in the same way.

In closing, the US EPA believes that a WLTP GTR is in the best interest of all the parties and in order to be successful we need to maintain the integrity of the process. The current road map poses serious technical concerns and assumes a very aggressive development schedule. Our experience has shown us that a considerable amount of technical expertise and time is required from government agencies to oversee the work of contractors and researchers who are assisting in the collection and analysis of data as well as development of measurement instrumentation and test facilities. Without such oversight, the potential for errors, misunderstandings and potential loopholes increase greatly. In order to address these concerns and to still meet the timeframe contemplated, we believe it is advantageous and appropriate to look to the best practices that exist today. We believe that the 40 years of experience with light-duty federal test procedure (FTP) in the United States, several subsequently developed cycles and procedures such as our highway fuel economy cycle, and the supplement federal test procedure can provide such a foundation.

² The US06 and SC03 are often referred to collectively as the Supplemental Federal Test Procedure (SFTP).

The United States is prepared to engage the contracting parties in discussion on all these topics, in order to revise the roadmap to reflect some or all of these changes. We look forward to working with the WLTP group and GRPE and to share our expertise and extensive data generated through many years of drive cycle, test procedure, and emission control regulatory development.